The Huxley Lecture

ON

RECENT ADVANCES IN SCIENCE AND THEIR BEARING ON MEDICINE AND SURGERY.

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GENTLEMEN,—When fifty-four years ago the school of Charing-cross Hospital gathered itself together for its winter work, among the new-comers was a pale-faced, dark-haired, bright-eyed lad, whose ways and work soon told his fellows that he was of no common mould. To-day I am about to attempt the fulfilment of the duty which the authorities of the school have done me the honour to lay upon me, that of delivering the first of the series of lectures which the school has wisely instituted to keep alive in the minds of those to come the great services which that lad's strenuous and brilliant life rendered to the healing art. The trust of the Huxley Lectureship provides that the lecturer shall dwell on recent advances in science and their bearings on medicine and surgery. I venture to hope that I shall be considered as not really departing from the purpose of the trust if I attempt to make this first lecture a sort of preface to the volume, or rather the volumes, of lectures to come. And since a preface bears a different paging and is writ in a different fashion from that which it prefaces I shall be so bold as, with your permission, to make the character of my lecture to-day different from what I suppose will be that of the lectures of my successors. It will, I imagine, be their duty to single out on each occasion some new important advance in science and show in detail its bearings on the art of medicine. Each succeeding lecturer will in turn be limited in the choice of his subject and so assisted in his task by the choice of his predecessors. I to-day have no such aid. It seems fitting that for the purposes of this initial lecture the word "recent" should be so used as to go back as far as the days of Huxley's studentship. If it be so used I am brought to face advances in science affecting medicine and surgery so numerous and so momentous that any adequate treatment of them as a whole would far exceed not only the time at my disposal, but also, what is more, my powers to treat and your patience to hear. I will not attempt so hopeless a task. Nor will I attempt to select what may be deemed or what may appear to me the most important of these advances and expound the bearings on medicine of these alone. I venture to hope I shall best fulfil the duty laid upon me and meet with your approval if I single out and dwell on one or two general themes suggested by the history of science during these fifty years.

The first theme is one suggested by a survey of the studies which engaged the young Huxley in the school here in 1842. This will bring before us a special bearing on our profession of the advance of science, which, though it may not be evident at first sight to everyone, is nevertheless real and important. Each case of illness is to the medical man in charge a scientific problem to be solved by scientific methods; this is seen more and more clearly and acknowledged more and more distinctly year by year. Now it is true that each science has to a certain extent its own methods, to be learnt only in that science itself, and from time to time we may see how a man, eminent in one branch of science, goes astray when he puts forward solutions of problems in another branch to the special methods of which he is a stranger. In nothing is this more true than in an applied science like that of medicine. At the bedside only can the methods of clinical inquiry be really learnt; it is only here that a student can gain that kind of mind which leads him straight to the heart of disease, that genius artis, without which scientific knowledge, however varied and however accurate, becomes nothing more than a useless burden or a dangerous snare. Yet it is no less true that the mind which has been already sharpened by the methods of one science takes a keener edge, and that more quickly when it is put on the whetstone of another science than does a mind which knows nothing of no science. And more than once inquiry in one science has been quickened by the inroad of a mind coming fresh from the methods of a quite different science. For all sciences are cognate, their methods, though different, are allied, and certain attitudes of the mind are common to them all. In respect to nothing is this more true than in respect to the methods of medicine. Our profession has been the mother of most of the sciences and her children are ever coming back to help her. In our art all the sciences seem to converge—physical, chemical, and biological methods join hands to form the complete clinical method. This is the real justification for that period of preparatory scientific study which each enactment of the authorities makes longer and harder for the student of medicine. It is this and not the mere acquirement of facts. The facts, it is true, are needed—every day the medical man has to lay hold (for professional use) of mechanical, physical, chemical, and biological facts. But facts are things which the well-trained mind can pick up and make use of as it goes along at any time and in any place. Whereas the mind which is not well trained will miss the facts, or pick up the wrong ones, or put to a wrong use even the right ones which it has in hand.

Now the ideal training to be got from any science is that of pursuing inquiry within the range of the science according to the methods of the science; in that way only does the spirit of the science fully enter into the man. But such an ideal education is impossible. We are fain to be content is merely making the student know what truths in each science have been gained and how they have been gathered in, such a teaching becoming more and more effective as a training, the more fully the student is made to tread in the very steps and thus to practise the methods of those who gained the truths. The more complete the body of any one science the more useful does that science become as a means of training, and hence it is that advance of science has a double bearing on the medical profession. As each science grows, not only does its new knowledge bring to the medical man new facts and new ideas, new keys to open locked problems and new tools to use day by day, but the incorporated knowledge gains greater and greater power as an instrument to train his mind rightly to use all the facts which come before him. Let me, in the light of this view, call your attention for a moment to the yoke of compulsory studies under which the young Huxley had to bend his somewhat unruly neck, and compare it with the like yoke which presses, heavily it seems to some, on the neck of the young student of to-day.

I have not been able to find an exact record of the course of studies pursued by young Huxley at Charing-cross Hospital in the years 1842-5, but I have been privileged to examine the stained and tattered schedule of the Royal College of Surgeons of England duly "signed up" for the years 1844-7 belonging to one who sat by Huxley's side during some of those years, who was then and afterwards his friend, and who has won honour for himself and for your school under the name of Joseph Fayrer. I find that young Fayrer attended during his first year a course of at least 140 lectures with 100 demonstrations on anatomy and physiology, a course of not less than 70 lectures on materia medica, a course on the practice of surgery and a course on the practice of physics each of not less than 70 lectures, and a course of hospital practice in surgery of not less than nine months. In his second year he again attended the 140 lecture course on anatomy and physiology and the 70 lecture course on the practice of surgery, and again hospital practice in surgery, taking as well a 70 lecture course in chemistry, and a like course in midwifery and hospital practice in medicine. In his third year he once more attended the 140 lecture course in anatomy and physiology, but no other systematic lectures; the rest of his time was devoted to hospital practice. To these demands of the Royal College of Surgeons of England we ought to add, in the case of the ordinary student, the demands of the Company of Apothecaries; but the main addition thus caused would be a course of botany. Such a curriculum differs widely, both in nature, extent, and order, from that in force at the present day. But I venture to think that if we examine the conditions of the time we shall find that the authorities of that day were as wise as—possibly wiser than—we of to-day. In judging such matters as these we must bear in mind that legislative enactments such as those prescribing a curriculum of study always exhibit a long latent period; they come into visible existence long after the stimulus

which begat them has been applied, long after the need of those things being done which the enactments strive to do has been felt. So long, indeed, is the latent period that often new needs have arisen calling for yet other regulations before the old ones appointed to meet the old needs have got into working order. Bearing this in mind we shall find that the course of study prescribed in Huxley's time was wisely chosen to meet the needs of at least the time immediately preceding if not indeed the time itself.

It will be observed that the study of physics, or, as it was then more commonly called, natural philosophy, finds no place whatever in young Fayrer's schedule, and that the one short course of chemistry, without any practical instruction, which he attended was taken in his second year, in the middle, as it were, of his course, when he was already advanced in his clinical studies. At the present time the sciences of physics and chemistry have each of them developed into a body of logically coördinate truths, furnishing an instrument for the training of the scientific mind, the value of which is to the medical student even greater than that of the mere facts of which the body is built up. Moreover, the methods of teaching have developed to a no less degree, so that in the laboratory the student follows, at a long distance it is true, but still follows the steps of those who have made the science and has at least the opportunity of catching something of the spirit of scientific inquiry. In this educational value of these sciences, even more than in the practical utility of a knowledge of the mere facts of the sciences, great as that may be, lies the justification of the authorities when they, desiring to improve the profession by introducing artificial selection into the struggle for existence, insist that all to whom the lives and health of their fellow men are to be entrusted should have learnt at least something of the sciences in question. In the time of Huxley's studentship both these sciences were in a very different condition. The time, it is true, was one of great awakening. In physics men's minds were busy opening up the hidden powers of electricity; some ten years before Faraday had made an epoch by discovering induced currents; he and others were still rapidly extending our knowledge, one practical outcome of which was the introduction of the telegraph in 1837. But how great has been the onward sweep in electric science since then; how great the advance in all branches of physics. To realise the great gap which separates the physics of to-day from the physics of then one has only to call to mind that the world had yet to wait some years before Mayer and Joule and Helmholtz and Grove had said their say; in the books which taught young Huxley the laws of physics he found not a word of that great law of the conservation of energy which like a lamp now guides the feet of every physical inquirer whatever be the special path along which he treads. In chemistry much, too, was being done. That science was in the first flush of success in its attack on the mysteries of organic compounds. Liebig, Dumas, and others were rapidly making discoveries of new organic bodies and dealing with types, and substitutions were beginning to make their way into the secrets of chemical constitution; but then, as indeed for a long time afterwards, progress was taking the form of the accumulation of new facts, interesting and eminently useful, but still mere facts, rather than of the gaining of insight into those laws of chemical change of which the facts are but the expression. And the brilliant success of purely organic chemistry was somewhat prejudicing those inquiries in regions where physics and chemistry touch hands, which in these latter days are producing such striking results. In the days of Huxley's studentship neither of these sciences presented such a body of truths as could be readily used as an engine of mental training, nor had the educational mechanism for thus employing them been as yet developed; a chemical laboratory for the student was hardly known, a physical one being wholly unknown. The profession turned to these sciences chiefly for the utility of the facts contained in them. The facts of physics, with the exception of those of mechanism, were but rarely appealed to, and if those of chemistry were in more common use it was bcause they threw light on the mysteries of the Pharmacopœia rather than because they helped to solve the problems of the living body. Hence the authorities, not without cause, demanded of the student no physics at all, and asked for chemistry only in the midst of his course when its facts might help him to understand the nature of the drugs which his clinical studies were already bidding him use.

As regards the biological sciences the time was also one of change, or rather of impending change; the causes of the change were at work, but for the most part were at work below the surface; their effects had not yet become obvious. In natural history, in what we sometimes now call biology, in botany, zoology, and comparative anatomy the activity in systematic and descriptive work was great. The sun of the great Cuvier was setting, but that of our own Richard Owen was at its zenith; new animal forms, recent and extinct, were daily being described; the deep was giving up its treasures, new plants and new beasts brought home by energetic travellers were being duly investigated. But this was only a continuation of what had been going on long before. Of the great biological revolution which was about to come there was not so much as even a sign in the skies when Huxley took his seat on the benches of Charing-cross Hospital Medical School, though Charles Darwin was already brooding over the ideas which had come to him during his long voyage. Two great changes, however, were already beginning—one due to new ideas and the other to improved methods. The morphological conceptions, of which von Baer in his "History of Development" had laid the foundations, and which were destined to make a new science of animal forms, were being carried forward by Johannes Müller in Germany, though, save for the expositions of Carpenter, they had made but little way in this country. Nowhere, indeed, had they progressed far. The man who, perhaps next to Huxley himself, was to advance them most, Gegenbaur, was as yet a mere student. Nor, in spite of the beginning made by von Baer himself, by Allen Thomson, and by Rathke, had embryology made much progress. Kölliker, to whom the science owes so much, had as yet written no line. Still the new ideas were beginning to push. Of no less importance was the impulse given by the improvements in the microscope. Only ten years before Sharpey, discovering that eminently microscopic mechanism ciliary action, found that a simple lens was a much more trustworthy tool than the then compound microscope. But in the ten years a great change had taken place, and during the latter part especially of the decennium improved instruments yielded a rich harvest of discovery in animal and vegetable life. Prominent among the new additions to truth was increased knowledge of the mammalian ovum, in acquiring which Wharton Jones, Huxley's teacher at Charing-cross Hospital, did much. But the most momentous and epoch-making step was the promulgation of the cell theory by Schwann and Schleiden as the decennium drew to its close, and more or less connected with that step was the accurate description by von Mohl of the structure of the vegetable cell, and his introduction of the word which, next to the word cell, has perhaps had the most profound influence on the progress of biological science—I mean the word protoplasm. Of this wide field of general biological knowledge the Royal College of Surgeons of England at that time took no heed, or at least made no formal demand. It is true that part of it found its place in the lectures on anatomy and physiology and in the consequent examinations, but only a small part. It is also true that the lecturer on materia medica had by custom licence to roam over almost the whole of nature, and the student in learning the nature and use of drugs took doses of heterogeneous natural history, the mention, for instance, in the Pharmacopœia of *castoreum* being made the occasion of a long disquisition on the biology of the beaver. But in this the end in view was the acquisition of facts, not training in scientific conceptions and ways of thought. The botany, it is true, which, unasked for by the Royal College of Surgeons of England, was insisted upon by the Society of Apothecaries, though made compulsory on utilitarian grounds as an appendage of, and introduction to, the Pharmacopœia, did serve the student in an educational way, teaching him how to appreciate likenesses and differences, even small ones, and how to distinguish between real and superficial resemblances; but the time he spent on this was too brief to make it, save in cases where a special enthusiasm stepped in, of any notable effect.

Of the then conditions of that biological scheme which comes closest to the profession, of physiology, I will say but a few words, curbing my natural tendency to dwell on it at too great a length. A great master, Johannes Müller, had a few years before written a great work, "The Outlines of Physiology"—a work which the wise physiologist consults with profit even to-day, noting with admiration how a clear, strong judgment may steer its way through the dangers of the unknown and the

still worse perils of the half-known. A study of that work teaches us the nature and extent of the advanced physiology which at that day an accomplished teacher like Wharton Jones might put before an eager student like Huxley, and we may infer what the ordinary teacher put before the ordinary student, each perhaps then, as since, eager neither to give nor to take more than the statutory minimum. When we look into the past of science and trace out the first buddings of what afterwards grew to be umbrageous branches, it sometimes seems as if every time and almost every year marked an epoch; it seems as if always someone was finding out something which gathered into greatness as the following years rolled on. But even bearing this caution in mind, the end of the thirties and the beginning of the forties of the present century do seem to mark a real epoch in physiology. All along the line accurate, careful observation, quickened by the rapid growth of the cognate sciences, was taking the first steps to replace by sound views the sterile discussions and scholastic disquisitions which had hitherto formed too large a part of physiological teaching. The first steps had been taken, but the most marked advance was yet to come. Though the observations of Beaumont had a few years before, by proving that gastric juice was a real thing and demonstrating its properties, shown the nature of digestion in its true light, the older fermentative and other theories were not yet abandoned by all. Though the conversion of starch into sugar had been recognised and pepsin had been discovered, the exact action of the digestive juices had yet to be learnt, that of pancreatic juice was almost unknown, and bile still reigned as the king of enteric secretions. In the physiology of respiration the view that the carbonic acid of expired air was formed in the lungs by the oxidation of the carbon of the blood still found strenuous support; for Johannes Müller found it necessary to argue at great length that the researches of Magnus on the gases of the blood had placed the matter in its true light. It had been suggested that the red corpuscles were in some way also special carriers of oxygen from the lungs to the tissues, but Müller could not regard this as anything more than a mere supposition. When it is borne in mind that injection with mercury was the one method employed for tracing out the course of the lymphatics it will be readily understood how imperfect was the then knowledge of the lymphatic system. And when it is also remembered that though Dutrochet had long before used osmosis to help in the interpretation of the movements of liquids in living tissues the exact researches of Graham had yet to come, it will also be understood why when questions of absorption and cognate questions of secretion came under consideration they were dealt with as questions in such a condition are dealt with even nowadays: much was said about them because little was known. Though Poisseuille, taking up the matter where it had been left by Stephen Hales in the foregoing century, had begun, and the brothers Weber were just continuing, the work of placing our knowledge of the mechanics of the circulation on a sound and exact basis, and though the then teaching of the mechanical working of the heart did not differ widely from that of to-day, the gap which separates the then knowledge of the circulation, even in its mechanical aspects, from that which we possess to-day, is seen in all its width when I remind you that Karl Ludwig's first paper was not published until Huxley had ceased to be a student, until the year 1845. As to all that great part of the physiology of the vascular system which concerns its government by the nervous system, I will only say that in Müller's great work may be read the pages in which he deals with the conflicting opinions and indecisive observations as to whether the brain and spinal cord have any influence over the heart beat, and in which, marshalling with logical force the arguments for and against the opinion that the bloodvessels have muscular fibres in their walls, finally decides that they have not. In the physiology of the nervous system a momentous advance had been made some few years before, in the early thirties, by the introduction through Marshall Hall of the idea of reflex action. This was rapidly supplying the key to many hitherto unsolved physiological and clinical problems. The special functions of the several cranial nerves were being worked out by Majendie, Reid, and others. The former, with Flourens, was also making many experimental researches on cerebral lesions and in another line of inquiry Bidder and Volkmann were preparing the way for discoveries to come by their important studies on the sympathetic system. The physiology of the senses was being vigorously pushed forward, by no one less than by Johannes Müller himself; but the reader to-day of Müller's volumes cannot but be struck with the smallness of the space (if we omit all that deals with the senses) which he allots to the nervous system, when we compare it with what is demanded in the present day. And no little part of even that limited space is taken up with a consideration of the laws of those "sympathies" which gave to the sympathetic nerves their name, but which have long since dropped out of sight. Lastly, it must be remembered that many of the speculations of the preceding part of the century had remained barren and many investigations had gone astray through lack of knowledge of the minute changes which lie at the bottom of physiological events. Those minuter changes could not but lie hidden so long as there was no adequate knowledge of minute structure. I have already referred to the improvements of the microscope taking place in the thirties, and this soon bore fruit in the rapid growth of that branch of biologic science once called general anatomy, later microscopic anatomy, and now best known by the name of histology. It is well-nigh impossible to exaggerate the importance of a histological basis for physiological deductions; it is one of the chief means through which progress has been made and must continue to be made. In the earlier days of physiology the grosser features of structure forming the subject matter of ordinary anatomy guided the observer to the solution of problems and functions, but after awhile these became exhausted, having yielded up all they had to yield, and in due time their place was taken by the finer features disclosed by the microscope. These show as yet no sign of exhaustion, and we may look forward in confidence to their standing us in good stead for years to come. We may expect them to last until we pass insensibly from that molecular structure which makes itself known by optical changes to that finer molecular structure which is only revealed by, and inferred from, its effects, which is an outcome of the ultimate properties of matter, and which is the condition, and so the cause, of all the phenomena of life.

The early forties of the present century may be taken as marking the rapid rise of histological inquiry. It is true that even before this the labours of Henle had gone far, that in this country the brilliant Bowman had already in 1840 given to the world his classic work on the structure of striated muscle, and a little later (1842) his hardly less important work on the structure of the kidney, that the sagacious Sharpey had embodied in Quain's Anatomy a whole host of important histological observations, and that many others were at work. Nevertheless, one has only to remember how closely the progress of histology is bound up with the name of Kölliker, and to call to mind that Kölliker's first paper was not published until 1841, to see clearly how much of our present knowledge of histology and all which that brings with it has been gathered in since Wharton Jones taught it to the young Huxley. If the gap which parts the physiological learning of that time from the learning of to-day is great, still greater is the gap in the teaching. Though at Charing-cross and in some other schools a course of physiology was given apart from that of anatomy, this was not separately recognised by the Royal College of Surgeons of England; it demanded simply a course of anatomy and physiology, of which the lion's share fell undoubtedly to anatomy. In accordance with this, in most schools, at all events, the greater part, and perhaps the sounder part, of the physiology taught was that which may be deduced from anatomical premisses. Where the teacher went beyond this he in most instances at least wandered into academical disquisitions and sterile discussions. Only in rare hands, such as those of Wharton Jones and William Sharpey, was the subject so treated as to be of any real use as a mental training for the medical student preparing his mind to view rightly biological problems. The science was not as yet sufficiently advanced as to be an educational engine which could be safely entrusted to the ordinary teacher's use. And the method of teaching it, happily recognised now, which alone ensures the salutary influences of the knowledge acquired—namely, that of following out in the laboratory the very steps along which the science has trod—was then wholly unknown. It was as a brilliant favourite pupil that young Huxley was encouraged by Wharton Jones to use the microscope himself and study among other things the structure of hairs; he was not led to it as one of a flock in a practical course. Indeed, one kind of knowledge only was at that time demanded of

the medical student in such quantity and in such a way as to render the study of it a real mental training. Not in one year only of his course, but in each year—in his first, his second, and his third year—was the student who hoped to obtain the diploma of the College compelled to attend lectures, each course consisting not, as in other subjects, of seventy, but of double that number of lectures, on what was styled anatomy and physiology, but was in the main what we now call anatomy. Moreover, the student learnt his anatomy then in the same way that he is bid to learn all other subjects now, not merely by listening to lectures or even by witnessing formal demonstrations, but by individual labour in the laboratory—in that laboratory which we call a dissecting-room. Nowadays it may seem strange to insist that the student should be studying anatomy during all the three years of his curriculum down to the very end of his studentship. But we must admit the wisdom of it then. At that time human anatomy was the one branch of knowledge which had achieved anything like complete development and which successive generations of teachers had shaped into an engine of mental training of the highest value. It was then the mainstay of scientific medical teaching. It was in the dissecting-room that the student of the time of which we are speaking acquired the mental attitude which prepared for the bedside. He there learnt to observe, to describe, to be accurate and exact, and the time spent there was wisely judged to be the most precious of his apprenticeship. The shaping of his mind by help of orderly arranged facts was perhaps even of greater value than the mere acquisition of the facts, important as this might be. The authorities of the time were, I venture to repeat, in my opinion, wiser in their generation in making this well-developed, adequately taught science of anatomy the backbone of the medical student's education; they were wise in making relatively little demand on the student in respect to the other sciences cognate and preparatory to medicine, the value to him of which consisted then chiefly in the facts which they embodied; they were also wise in giving him leave to defer his study of them until his knowledge of something of the needs of his future profession should have opened his eyes to the value of those sciences as mere records of facts. I also, however, venture to think that the advance of these sciences since then has greatly changed their bearing towards the medical student no less than towards medicine. What was wisdom in the forefathers is not necessarily wisdom in us the children. I have no wish to take advantage of the occasion of this lecture to make an excursion into the troubled land of medical education. But I feel sure, indeed I know, that I am only saying what the man whose name these lectures bear always felt, and, indeed, often said, when I suggest for consideration the thought that while some choice out of that advancing flood of science which is surging up around us, and which all has some bearing on the medical profession, some choice as to what must be known by him who aspires to be the instrument of the cure and prevention of disease is rendered necessary to us by the struggle for existence, a decided and even narrow choice lest the ordinary mind be drowned in the waters which it is bid to drink, in making that choice we should remember that an attitude of mind once gained is a possession for ever, far more precious than the facts which are gathered into the mind with toil and flee away from it with ease. This should be our guiding principle in demanding of the medical student knowledge other than that of disease itself.

The usefulness and so the success of a medical man is largely dependent on many things which belong to the profession viewed as an art, quickness of insight, promptness of decision, sleight of hand, charm of manner, and the like—things which cannot be taught in any school. But these are in vain unless they rest on a sound and wide knowledge of the nature of disease, on a sound and wide grasp of the science of pathology; and this can be taught. By a sound and wide grasp I mean such a one as will enable him who has it to distinguish, as it were by insight, among the new things which almost every day brings to him that which is a solid gain from that which is a specious fallacy. Such a grasp is only got by such a study as leads the mind beyond the facts into the very spirit of the science. But what we call pathology is a branch—a wide and recondite branch, but still a branch—of that larger science which we call physiology; it employs the same methods, but applies them to special problems. So much are the two one that it would doubtless be possible to teach pathology to one who knew no physiology; such a one would learn physiology unawares, but at a great waste of time. For physiology in its narrower sense, being older, has become organised into an engine which can be used for leading the mind quickly and easily into the spirit and methods of true pathological inquiry. The teaching of it as an introduction to pathology is an economy of time. That, I take it, if compulsion be justifiable at all, is the justification of its being a compulsory study. Further, the methods of physiology in turn are the methods of physics and of chemistry, used hand in hand with other methods special to the study of living beings, the general methods of biology. And here, again, it is an economy of time that the student should learn these methods each in its own science; and this is the justification for making these sciences also compulsory. But in all the regulations which are issued concerning these several ancillary sciences this surely should be kept in view, that each science should be taught not as a scientific accomplishment of value in itself but as a stepping stone to professional knowledge of value because it is the best means of bringing the student on his way to that.

Now let me turn to another theme suggested by what has happened in science and in the profession since the days of Huxley's studentship, and that is the complexity of the bearings of any one discovery, of any one advance, as well on science itself as on the applications of science. In the garment of science with which man is wrapping himself round, or, rather, is being wrapped round, the several threads are woven into an intricate web. As the loom which is weaving that ever-spreading garment takes in new warp and new woof, such threads only of each are taken in as can be fitly joined to those which have come in before; each thread as it is twisted in becomes a hold for other threads to be caught up later. No single observation, no single experiment stands alone by itself, nor can its worth be rightly judged by itself alone. The mistaken philanthropists who have put restrictions, and would put more, on physiological investigations betray that ignorance of the ways of science which seems to be a necessary condition of their attitude when they ask us to state in a sentence the direct application to the good of man of each experiment on a living animal. In the doors of science, each the opening as often of a lane as of a chamber, it is not, as such folk seem to think, that each bobbin pulls only one latch. Every experiment and every observation has, besides its immediate result, effects which in proportion to its value spread away on all sides into even distant parts of knowledge. The good of the experiment by itself is soon merged in the general good of scientific inquiry. The science of physiology, and by implication the art of medicine, is built up in part on experiments on living animals—in part only, but that part is so woven into all the rest that any attempt to draw it out would lead to a collapse of the whole. It is because each experiment or observation is thus a thread caught up in a close-set web that its value depends not alone on the mere result of the experiment or observation itself, but also, and often even more so, on the time at which, and on the circumstances and relations under which, it is made. This truth the real worker in science has borne in upon him again and again; it is this which leads him to that humility which has ever been the outward token of the fruitful labourer. He feels that it is not so much himself working for science as science working through him. Let me attempt to illustrate this by dwelling on some two or three single observations in physiology made almost at the time, or very soon after the time, at which Huxley was a student. It will, I think, be seen that each of them has reached a long way in its bearing on the science of physiology and on the art of medicine, that the full effect of each has been dependent both on what went before and on what has happened since, and though they were all made, so to speak, long ago, some of their fruits were brought in as it were yesterday, and their full fruition is perhaps not yet accomplished.

I will first invite your attention to a single experiment—for (though repeated on various animals) we may call it a single experiment—which in the fall of the year 1845 Ernest Heinrich Weber, then Professor of Anatomy at Leipzig, and his brother Eduard Friedrich reported to an assembly of Italian scientific men in Naples, and of which they subsequently published an account in Müller's *Archiv* in 1846. Making use of the recently introduced rotating electromagnetic apparatus (the physical discovery begetting the physiological one) they found that powerful stimulation of the vagus nerves had the unexpected result of stopping the

heart from beating. This single experiment, which I may quote by the way, is a typical experiment on a living animal, for it is impossible to imagine how the discovery of this action of the vagus on the heart could have been made otherwise than by an experiment on a living animal; this single experiment has made itself felt far and wide throughout almost the whole of physiology. In the first place, it has made us understand in a way impossible before the experiment how through the intervention of the nervous system the work of the heart is tempered to meet the strain of varying circumstances. As I said a little while back, only a few years before even eminent observers were groping about in a dim light hotly discussing whether the brain and spinal cord could affect the beat of the heart. To all these discussions Weber's experiment came as a great light in a dark place. There is no need for me to insist how this knowledge that impulses descending the vagus slow or restrain the heart beat, and the knowledge genetically dependent on this, that impulses reaching the heart along the cardiac sympathetic nerves from the thoracic spinal cord stir up the heart to more vigorous or frequent beats, has since served as a guide for the physician in the intricate problems of cardiac disease, and that with increasing security as our knowledge of the details of the actions has increased. The knowledge may not always have been widely used. On this point I may, perhaps, be allowed to repeat the caution which I may have given elsewhere concerning the dangers of taking a new physiological fact direct and straight, raw and bleeding as it were, from the laboratory to the bedside. The wise physiologist takes care even in physiology itself not to use a new fact as an explanation of old problems without a due testing and a direct verification of its applicability. How much more is it needful that the medical man who sails, not on the calm seas of the phenomena of health, but amid the troubled tempests which we call disease should not hastily and heedlessly rush to make practical use of a new fact, tempting as the use may be, until he also has tested its applicability by that clinical study which is his only sure guide. But this is by the way. In the second place, as a mere method Weber's discovery has in physiological experimentation borne most important fruit. Before Weber's experiment many an investigation, not only on the vascular system itself but in many other branches of physiology, came to a standstill or went astray because the experimenter had not the means, on the one hand, to stop or slacken, or, on the other, to quicken and stir up the heart without interfering largely with the object of his research. Thanks to Weber's experiment and what has come of it that can now be done with ease, and thus solutions have been obtained of problems which otherwise seemed insoluble. In the third place, the experiment has had a profound and widespread influence by merely serving to introduce a new idea—that idea which we now denote by the word inhibition. Before the experiment, though men's minds were gradually getting clearer concerning the nature of a nervous impulse, all known instances of the action of a nervous impulse had for the result an expenditure of energy, and it was a still open, though hotly debated, question whether in such actions as when a muscle was thrown into contraction by a nervous impulse this feature of expenditure was not impressed on the muscle by the very nature of the impulse itself. That question the experiment answered in the negative once and for all. Whatever the exact nature of a nervous impulse it was evidently of such a kind that it might on occasion check expenditure and bank up energy in an increased potential store. Observation soon showed that the heart and vagus was no solitary example. It was recognised that the due regulation of many of, if not all, the so-called nervous centres was secured, not merely by the intrinsic forces of passive rest, making themselves felt in the absence of stimulation, but also, and even more so, by the alternating play of antagonistic influences. Throughout all the sciences the resolving a stability seemingly due to intrinsic causes into an equilibrium arising out of the balance of opposing forces has again and again marked a step forward; and it is perhaps not too much to say that a like analysis, prompted by the story of the vagus and the heart, has profoundly modified all our conceptions of the way in which nervous impulse, sweeping along the intricate yet ordered network of paths in the brain and spinal cord, determines the conduct of life. The idea has, of course, been abused as well as used, as what idea has not. Such a word as inhibition could not but fail to have a blessed sound in the ears of the ignorant; the idea has been ignorantly and wrongly applied; but this is of little moment in view of the help which it has given to wise and well-directed inquiry. And the idea has spread with fruitful results beyond the limits of nervous impulses; it has been carried deep down into the very innermost molecular processes of life. The closer we penetrate into the physico-chemical events through which living matter grows, lives, and dies, the clearer does it seem that life itself is a shifting outcome of two opposing sets of changes, one synthetic, constructive, the other destructive, analytic, and that the key to this and that riddle of vital action lies within the grasp of him who can clearly lay hold of the mutual relations of these conflicting changes. The story of the vagus and the heart is a tale, not of the heart alone, not of the nervous system alone, but of all living matter. The light which first shone in the experiment of the brothers Weber may in a sense be said to have gone out into all the lands of physiology.

Let me now turn your attention to an experiment made a few years later. This is also an experiment made on a living animal, and whatever good may have come out of that to which it has given rise must be reckoned as the fruit of an experiment. In 1851 Claude Bernard made known that division of the cervical sympathetic led to a widening of the bloodvessels, and a warming of the ear and other parts of the head and neck. This was the beginning of what may rightly be called the great vaso-motor knowledge. It may be true that more that a hundred years before, in 1727, Du Petit had observed much the same thing, but nothing came out of it; the germinal time had not yet arrived. It may be true that other observers since had divided the cervical sympathetic and noted the effects; but these had their attention directed chiefly to changes in the pupil. It may be true that Brown-Séquard and Waller, a few months before Bernard himself was able to do so, supplied the complement to the original experiment by showing that stimulation of the peripheral part of the divided sympathetic constricted the bloodvessels and reduced the temperature. All this may be true, but there remains the fact that with Bernard's experiment the new light began. That experiment marks the beginning of our vaso-motor knowledge.

I have already spoken of the prolonged discussions which, just before the date of Huxley's studentship, were taking place touching the question whether or no the bloodvessels were muscular and contractile. That question had meanwhile been definitely settled by Henle's demonstration in 1840 that the tissue in the middle coats of arteries really consisted in part of muscular tissue of the kind known henceforwards as plain muscular tissue. But for some years no use was made of this discovery in the direction of explaining the intervention of the nervous system in the government of the circulation. That began with Bernard's experiment. It would, I venture to think, be sheer waste of your time and mine if I were to attempt to labour the theme of the large share in our total physiological knowledge which is now taken up by the vaso-motor system and all that belongs to it, and of the extent to which the physiology of that system has woven itself into pathological doctrines and helped medical practice. I would simply ask the lecturer on physiology in what stress he would find himself if he were forbidden in his teaching to say a word which would imply that the calibre of the bloodvessels was influenced by the contraction of their walls through nervous influence, or ask the student how often in an examination of to-day, he would have to sit seeking inspiration by biting his pen or staring at the roof if he too, in his answers, could never refer to vaso-motor actions. Whatever part of physiology we touch, be it the work done by a muscle, be it the various kinds of secretive labour, be it that maintenance of bodily temperature which is a condition of bodily activity, be it the maintenance of the brain's well-being in the midst of the hydrostatic vicissitudes to which daily life subjects it,—in all these, as in many others, we find vaso-motor factors intervening; and, to say nothing of the share taken by these in the great general pathological conditions of inflammation and fever, they also have to be taken account of by the medical man in studying the disordered physiological processes which constitute disease, whatever be the tissue most affected by the morbid conditions. Take away from the physiological and pathological doctrines of to-day all that is meant by the word "vaso-motor," and those doctrines would be left for the most part a muddled, unintelligible mass, to so great an extent has that which

Bernard's experiment began entered into our modern views. It was Bernard's good fortune, but deserved good fortune, to announce almost at the same time two fundamental discoveries. For I venture to claim for his discovery of the formation of glycogen in the liver, briefly indicated in 1850 and more fully expounded in 1851, an importance only second, if second, to that of the experiment with which we have just been dealing. To judge of its importance we must look at it from more than one point of view. At the time when Huxley was sitting at the feet of Wharton Jones the teaching of the schools was largely governed by the view that the animal organism, in contra-distinction to the vegetable organism, was essentially destructive in its chemical actions, possessing no power in itself of synthetic construction. It is true that the possible synthesis of organic compounds special to the animal body had long before, in 1828, been shown by Wohler's artificial formation of urea. It is true also that Huber in the case of bees, and Liebig in the case of cows, had already shown that wax and fat must be in part manufactured out of something that was not fat. The conclusions, however, of these observers were at best somewhat distant inferences from statistical data, and in any case had not as yet made much way in the direction of general acceptance. But Bernard's experiment was in the form of an ocular demonstration. The glycogen which had been formed in the liver could be extracted, could be seen, handled, and if need be tasted—a result adequate to convince even a physiological Thomas. We may claim for Bernard's glycogen discovery that as the first realistic proof of the synthetic powers of the animal organism it did much to establish a truth which succeeding observations have only served to confirm and extend—namely, that the animal, no less than the vegetable organism, possesses synthetic powers, and that the want of prominence of these in the ordinary work of the animal body is to be attributed to economic reasons and not to absence or even scantiness of power. But there is another aspect from which the discovery must be viewed. At the time of which we are speaking physiologists were still, as they had been of old, largely under the influence of a somewhat mechanical conception of the body as a collection of organs, each of which had its special use or function, the unity of the body being maintained by the mutual adaptation of the constituent organs. This was further developed into the view that when a use of an organ had been satisfactorily made out, when a function had been made clear, all that remained to be done in the way of research was simply to inquire how far and in what ways the performance of that function was influenced by changes in the rest of the body or by external circumstances. It was acknowledged, for instance, on all hands that the function of the liver was to secrete bile, and physiologists in general were content to look forward for future discoveries which should throw light on the exact nature of the mechanism of the secretion and on why the liver secreted now more and now less bile, and to these alone without expecting anything else.

Bernard's discovery, that the liver not only secreted bile, but manufactured glycogen, fell on physiologists like a bolt from the blue. The knowledge that the same hepatic cell was engaged both in secreting bile and manufacturing glycogen, and that the sugar or other products of digestion were carried from the intestine, not straight to the tissues which they were destined in any case ultimately to nourish, but to the liver, there to undergo transformation and await some future fate, marked the beginning of a new way of looking at the problems of nutrition. It was recognised that these became less simple, more complex than they had formerly seemed, but the very complexity gave hope of possible solutions. It was seen that as the blood swept in the blood-stream through the several tissues it might undergo profound changes without any visible outward token such as that of the appearance of secretion in the duct of a gland or of the contraction of a muscle, it might undergo changes which could only be demonstrated by differences in its composition or its properties as it came to, or left, this or that tissue. The technical difficulties of the analysis of blood prevented any immediate marked steps in the way of advance; and attempts to establish in respect to any particular tissue the changes which the blood underwent in it by inference from the results of experimental interference met with difficulties of another but no less serious kind. Hence the world had to wait some little time before the new idea which Bernard's discovery had started bore important or striking fruit. Yet it was not very long before it was seen that the hepatic cell had heavy duties touching the metabolic changes of proteid as well as a carbohydrate material, that it and not the kidney alone had to do with urea as well as sugar, and the difficulties which physiologists in the early half of this century must have keenly felt how to reconcile the bold task of secreting bile, which alone technical physiology allotted to the liver, with the overweening importance which not only popular experience, but more exact clinical study, could not but attach to that organ, began to steal away. A little later exact experimental inquiry converted into certainty the suspicions which clinical study had raised, that the blood in streaming through the thyroid gland underwent changes of supreme importance to the nutrition of the tissues of the body at large. Still a little later the Bernardian idea, if I may so venture to call it, doubling, so to speak, on itself, led to the discovery that the mysteries of the fate of sugar in the body were not lodged in the liver alone, but might be traced to the pancreas. It was seen that as the blood streaming through the liver worked on sugar besides secreting bile, so the pancreas, besides secreting its marvellous omnipotent juice, also influenced, though in a different way, the career of sugar in the body, and that the disease we call diabetes was, or might be, in some way connected with the pancreas no less than with the liver. I need not go on to speak of recent researches on the supra-renal capsules or of other organs. It is enough to note that one of the most promising lines of inquiry at the present day is that relating to the changes of which I am speaking, sometimes known under the name of "internal secretion." Every year — nay, almost every month—brings up some new light as to the details of the great chemical fight which the blood is carrying on in all the tissues of the body—it may be, perhaps to-morrow, that we shall learn of some work of a kind wholly unexpected which is carried out by that great Malpighian layer of the skin which wraps round our whole frame. In any case the line of inquiry is one of the most fruitful of those of the present day. I may add, too, I think, that it is one which has been of the greatest direct use to mankind and promises still more. It is true that Bernard's discovery of glycogen, and perhaps especially the diabetic puncture, raised hopes which have not been fulfilled. Not to-day any more than forty years ago it is in our power wholly to remove the disease which we call diabetes. But short of complete mastery, how great is our power now compared with then. And when we remember that the pancreatic relations of sugar are far from being worked out and that such knowledge as physiologists already possess has not yet made much way in clinical study, we may look forward to marked progress possibly in no very distant time. Further, if there be any truth in what I have insisted upon that the value of a discovery is to be measured not only by its immediate application, theoretical and practical, but also by the worth of the idea which it embodies and to which it gives life, and if it be true, as I have suggested, that by the genesis of ideas the discovery of glycogen is mother of all our knowledge of internal secretion in its widest sense, of the work of the thyroid and other like bodies, then the good to suffering mankind which may be laid to the door of Bernard's initial experiment is great indeed.

The next result to which I will call your attention is again an experiment, and once more an experiment on a living animal. In 1850 Augustus Waller described in the Philosophical Transactions the histological changes which division of the hypoglossal and glosso-pharyngeal nerves in the frog produced in the fibres of the distal portions of the nerves and shortly afterwards developed this initial result into the more general view of the dependence of the nutrition of a nerve fibre on its continuity with a cell in the central nervous system or, in the case of afferent fibres, in the ganglion of the posterior root. This discovery was at the time, and has since continued to be, of value as a contribution to physiological ideas; it had its share in promoting the progress, which, though slight, is still a progress, of our understanding the obscure influences which the part of a cell enclosing the mysterious nucleus exercises over all the rest of the cell. And, perhaps, even to-day the theoretical value of that degeneration of nerve fibres, the knowledge of which we owe to Waller, is not adequately appreciated and the lead which it gives not followed out as it might be. In spite of all we know we are too much apt to fall back on the conception that when no nervous impulse is travelling along a nerve fibre

the nerve fibre is in a state of motionless quiescence, and that a nervous impulse when it does come sweeps over the fibre as a wave sweeps over a placid lake. But the Wallerian degeneration gives such a view the lie direct. When we reflect that the finely balanced molecular condition, which itself is nothing more than the falsely seeming quiescence of an equilibrium of opposing motions in the ultimate fibrils of the nerve twigs in the ultimate phalanx of the finger by which we touch and get to know the world without us, is dependent on what is going on around the nucleus of a cell or the nuclei of some cells in the ganglion or ganglia of certain upper spinal nerves, so that if the continuity of the axis cylinder process be anywhere broken the figure of the molecular dance changes at once and riot takes the place of order—when we reflect on this it is clear, I say, that between the molecules of the ultimate fibrils branching in the Malpighian layer of the ball of the finger and the molecules within the immediate grasp of the nucleus of the cell from which those fibrils start there must be ever passing thrills—thrills, it is true, of so gentle a kind that no physical instrument we as yet possess can give us warning, so gentle that compared with them the wave which carries what we call a nervous impulse must appear a roaring avalanche, but still thrills, the token of continued movement. And of such gentle, impalpable, unnoticed thrills we must in the future take full account if we are ever to sound the real depths of nervous actions.

It is not, however, as a contribution to theoretical conceptions, but rather as a method, that the results of Waller have so far had their chief effect on the progress of physiology and medicine. And I have chosen it as a thing to dwell on, because it seems to me a striking instance of the value of a method merely judged as a method, and further because the value of its use illustrates my theme that the success of any one scientific effort is contingent on the converging aid of other coincident efforts. For some time it is true—for years, in fact—the Wallerian method was employed solely or chiefly in what, without reproach, may be called the smaller problems of physiology. It settled many topographical questions, it cleared our views as to the distribution of afferent and efferent fibres, it seemed to add or replace a few stones here and there in the growing building; but it did not greatly change the whole edifice. After a while, however, it met with two helpmates—the one sooner, the other later—and by means of the three together we have gained, and are still gaining, such additions to our knowledge of the ways in which the central nervous system works out the acts which make up our real life as to constitute perhaps the most striking progress in the physiology of our time. A wholly new chapter of nervous physiology has through them been opened up. The one colleague is to be found in the experiments of Fritz and Hitzig and of Ferrier, again experiments on living animals—experiments which, by demonstrating the existence of definite paths for the play of nervous impulses within the central nervous system, opened up paths for the play of new ideas concerning the working of that system. I say "demonstrating the existence of definite paths," for this, and not the topographical recognition of so many centres of hypothetical nature, is the solid outcome of experiments on local stimulation of the cerebral cortex. Views come and go as to what is happening when the current is flitting to and fro between two electrodes placed on a particular spot of the Rolandic area; the solid ground on which each view strives to establish itself is that the particular spot is joined by definite nervous paths to particular peripheral parts. I say "demonstrating the existence of particular paths," but what would have been the demonstrative value of the experiments of stimulation or of removal by themselves without the anatomical support furnished by the Wallerian method. And I may justly include within the Wallerian method not the mere tracking out of the degenerated fibre by the simple means at Waller's own disposal but such finer, surer search as is afforded by the later help given by the newer development of the staining technique.

They who have the widest experience of experiments on living animals are the first to own that in a region of delicate complexity like that of the central nervous system the interpretation of the results of any experimental interference may be, and generally is, in the absence of aid from other sources a matter of extremest difficulty, one in which the observer, trusting to the experiment alone, may easily be led astray. I need not labour the question, What would have been the value of the mere effects of stimulating or even of removal of parts of the cerebral cortex, and whither would they have led us had the experimental results not been supported and their interpretation guided by the teachings of the Wallerian method? It is not too much to say that the experiments of Ferrier and his peers, brilliant as they were, might have remained barren, useful only as isolated broken bits of knowledge, or might even have led us astray had they not been complemented by anatomical facts. They have not remained barren and they have not led us astray. The Wallerian method picked out from the tangle of nerve fibres making up the white matter of the brain and spinal cord, the pyramidal tract running from the Rolandic area to the origins of all the motor roots, even of the lowest, and so joining hands with the experiment, made it clear that whatever might be the exact nature of the events taking place in a particular spot of the cortex of that area, that spot was, by the definite paths of particular nerve fibres, put in connexion with definite skeletal muscles. The pyramidal tract was further shown to be merely one, an important one it is true, but still merely one of a large class. So it is that the experimental results and the Wallerian results, not merely in that Rolandic area where the results of experiment take on the grosser form of readily appreciated interference with movements, but in other regions where other finer and more occult manifestations of nervous and psychical actions have to be dealt with, are, it may be slowly, but yet surely, resolving that which seemed to be a hopeless tangle of interweaving and interlacing nerve fibres and cells into an orderly arrangement of which the key is seen to be that each nerve fibre is a path of impulses coming from some spot, it may be from near, it may be from afar, where events are taking place and carrying the issue of those events to some other spot, there to give rise to events having some other issue. But a third factor was wanting to forward our insight into this orderly arrangement, and especially, by again affording an anatomical basis, to open the way towards explaining what was the order of events in the spots or centres, as we call them, in which the fibres began or ended, and what was the mechanism of the change of events. This, I venture to think, we may find in the special histological method which, however much its usefulness has been enhanced by its subsequent development in the hands of Cajal, Kölliker, and others, as well as by the coincident methyl-blue method, we owe to Golgi. The final word has not yet been said as to the exact meaning and value of the black silver pictures which that method places before us, but this at least may be asserted, that by means of them the progress of our knowledge of the histological constitution of the central nervous system has within the last few years made strides of a most remarkable kind. It may be that those pictures are in some of their features misleading; it may be that the terminal arborisation and their lack of continuity with the material of the structures which they grasp does not afford an adequate explanation of the change in the nature of the nervous impulses which takes place at the relays of which the arborisations seem the token; it may be—indeed, it is probable—that we have yet much to learn on these points. But, notwithstanding this, it must still be said that by the help of this method our knowledge of how the fibres run, where they begin, and where they end within the brain and spinal cord has advanced, and is advancing, in a manner which to one who looks back to the days when Huxley was studying within these walls seems little short of marvellous. Let me once more repeat the value of this silver method is not an intrinsic one; it has its worth because it fits in with other methods, it is available on account of what is known apart from it. I imagine that if in 1842 Huxley, at Wharton Jones's suggestion, had invented the silver method, it would have remained unknown and unused. The time for it had not then come. The full fruition which it has borne and is bearing in our day has come to it because it works hand in hand with the two other methods of which I have spoken, the Wallerian and the experimental method. It is these three working together which have brought forth what I may venture to call the wonders which we have seen in our days, and I cannot but think that what we have seen is but an earnest of that which is to come. In no branch of physiology is the outlook more promising, even in the immediate future, than in that of the central nervous system. But surely I do it wrong to call it merely a branch of physiology. It is true that if we judge it by even the advanced knowledge of to-day, it takes up but a small part of the whole teaching of the science; but when we come to know about it that

which we are to know all the rest of physiology will shrink into a mere appendage of it, and the teacher of the future will hurry over all that to which to-day we devote so much of the year's course in order that he may enter into the real and dominant part of the subject.

There is no need for me to labour in detail how the knowledge gained by the three methods, of which I have been speaking, by laying bare the secrets of nervous diseases and opening up the way for successful treatment or for accurate and trustworthy prognosis, has helped onward the art of medicine. Even the youngest among us must be impressed when he compares what we know to-day of the diseases of the nervous system with what we knew, I will not say fifty, but even twenty, nay even ten, years ago. Do not for a moment suppose that I am attempting to maintain that the great clinical progress which has taken place, has resulted from the direct, immediate application to the bedside of laboratory work, or that I wish to use this to exalt the physiological horn. I would desire to take a higher and broader standpoint—namely, this, that the close relations and mutual interdependence of laboratory physiology and that bedside physiology which we sometimes call pathology, and the necessity of both for the medical art, is nowhere more clearly shown than by the history of our recent advance in a knowledge of the nervous system as a whole. In this, when we strive to follow out the genesis of the new truths, it is almost impossible to trace out that which has come from the laboratory and that from the hospital ward, so closely have the two worked together. An idea started at the bedside has again and again been extended, shaped, or corrected by experimental results, and been brought back in increased fruitfulness to the bedside. On the other hand, a new observation, which, had it been confined to the laboratory, would have remained barren and without result, has no less often proved in the hands of the physician the key to clinical problems the unlocking of which has in turn opened up new physiological ideas. And though the scope of these Huxley lectures is to deal with the relations of the sciences to the medical art, I shall, I trust, be pardoned if I turn aside to point out that this swelling knowledge of how nerve cell and nerve fibre play their parts in bringing about the complex work done by man's nervous system is not narrowed to the relief of those sufferings which come to humanity in the hospital ward or in the sick-room at home. Mankind suffers much more deeply, much more widely, by misdirected activities of the nervous system, the meddling with which lies outside the immediate calling of the doctor. Yet every doctor, I may say every thoughtful man, cannot but recognise that the distinction between a so-called physical and so called moral cause is often a shadowy and indistinct one, and that certainly so-called moral results are often the outcome, more or less direct, of so-called physical events. I venture to say that he who realises how strong a grip the physiologist and the physician working hand in hand are laying on the secret workings of the nervous system, who realises how step by step the two are seeing their way to understand the chain of events issuing in that sheaf of nervous impulses which is the instrument of what we call a voluntary act, must have hopes that that knowledge will ere long give man power over the issue of those impulses to an extent of which we have at present no idea. Not the mere mending of a broken brain, but the education, development, and guidance of cerebral powers by the light of a knowledge of cerebral processes is the office in the, we hope, not far future of the physiology of the times to come.

I might bring before you other illustrations of the theme which I have in hand. I could, I think, show you that the very greatest of all recent advances in our art, that based on our knowledge of the ways and works of minute organisms, has come about because several independent gains of science met, in the fulness of time, and linked themselves together. But my time is spent. I should be very loath, however, to end this first Huxley Lecture—and you, I am sure, would not wish that I should—without some word as to what the great man, and my dear friend, whose name the lectures bear, had to do with the progress on some points of which I have touched. He had an influence, I think a very great one, upon that progress; but his influence, as is natural, bore most on the progress in this country. The condition and prospects of physiology in Great Britain at the present moment, are, I venture to think, save and except the needless bonds which the legislature has placed upon it, better and brighter than they ever have been before. At one time, perhaps, it might have been said that physiology was for the most part being made in Germany; for—in spite of the fact that some of the greatest and most pregnant ideas in physiology have sprung from the brains of Englishmen—it must be confessed that in the more ordinary researches the output in England has at times not been commensurate with her activities of other kinds. But, that cannot be said now. The English physiological work of to-day is both in quantity and quality at least equal to that of other nations, having respect to English resources and opportunities. Part of this is probably due to that blessedness or activity which is the natural response to the stimulation of obstacles and persecution. The whip of the anti-vivisectionists has defeated its own end. But it is also in part due to the influence of Huxley. That influence was twofold, direct and indirect. I need not remind you that not only when he sat on the benches of Charing Cross Hospital, but all his life long afterwards, Huxley was at heart a physiologist. Physiology, the beauty of which Wharton Jones made known to him, was his first love. That morphology, which circumstances led him to espouse, was but a second love, and though his affection for it grew with long continued daily communion and he proved a faithful husband, devoting himself with steadfast energy to her to whom he had been joined, his heart went back again, and especially in the early days, to the love which was not to be his. What he did for morphology may perhaps give us a measure of what he might have done for physiology had his early hopes been realised. As it was he could show his leanings chiefly by helping those who were following the career denied to himself. Unable to put his own hand to the plough, he was ever ready to help others whom fate had brought to that plough—especially us younger ones—to keep the furrow straight. And if I venture to say that the little which he who is now speaking to you has been able to do is chiefly the result of Huxley's influence and help it is because that only illustrates what he was doing at many times and in many ways. His indirect influence was perhaps greater even than his direct. The man of science, conscious of his own strength, or rather of the strength of that of which he is the instrument, is too often apt to underrate the weight and importance of public opinion—of that which the world at large thinks of his work and ways. Huxley, who had in him the making of a sagacious statesman, never fell into this mistake. Though he felt as keenly as anyone the worthlessness of popular judgment upon the value of any one scientific achievement or as to the right or wrong of any one scientific utterance, he recognised the importance of securing towards science and scientific efforts in general a right attitude of that popular opinion which is after all the ultimate appeal in all mundane affairs. And much of his activity was directed to this end. The time which seemed to some wasted he looked upon as well spent when it was used for the purpose of making the people at large understand the worth and reach of science. No part of science did he more constantly and fervently preach to the common folk than that part which we call physiology. His little work on physiology was written with this view among others, that by helping to spread a sound knowledge of what physiology was among the young of all classes he was preparing the way for a just appreciation among the public of what were the aims of physiology and how necessary was the due encouragement of it. And if, as I believe to be the case, physiology stands far higher in public opinion, and if its just ambitions are more clearly appreciated than they were fifty years ago, that is in large measure due to Huxley's words and acts. I have not forgotten that he was one of a Commission whose labours issued in the forging of those chains to which I have referred; but knowing something of commissions and bearing in mind what were the views of men of high influence and position at that time, I tremble to think of what might have been the fate of physiology if a wise hand had not made the best of adverse things.

One aspect of Huxley's relations to science deserves, perhaps, special comment. On nothing did he insist more strongly than on the conception that great as are the material benefits which accrue from science, greater still is the intellectual and moral good which it brings to man; and part of his zeal for physiology was based on the conviction that great as is the help which as the basis of the knowledge of disease and its applications to the healing art it offers to suffering humanity in its pains and ills, still greater is the promise which it gives of clearing up the dark problems of

human nature and laying down rules for human conduct. No token in these present days is more striking or more mournful than that note of pessimism which is sounded by so many men of letters in our own land no less than in others, who, knowing nothing of, take no heed of, the ways and aims of science. Cast adrift from their old moorings such men toss about in darkness on the waves of despair. There was no such note from Huxley. He had marked the limits of human knowledge and had been led to doubt things about which other men are sure, but he never doubted in the worth and growing power of science and with a justified optimism looked forward with confident hope to its being man's help and guide in the days to come.

THE PREVENTION OF DISEASES OTHER THAN INFECTIOUS DISEASES.

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IT has been stated that "if anything approaching a perfect system of hygiene depended on individual effort we might conclude that the belief in the possibility of such a system is one of those dreams which breathe a blind hope into us—a hope born only of our longings and destined to die of our experience." The beneficent effect of State medicine in preventing disease, in lengthening the span of human life, and in increasing the vigour and usefulness of our race is so well established that I need only allude to it. It is perfectly evident, however, that numerous diseases which might be prevented cannot possibly be caught within the meshes of enactments applicable to the community as a whole or which regulate particular trades and industries. In every community there are numerous persons scattered as individuals, or grouped in families, with morbid proclivities to various diseases. The seeds of their decay are within such persons as well as around them. They receive some benefit (probably more in proportion to their number than the rest of the population) from such improvement in their environment as is brought about by the various measures devised for the benefit of the whole community. Yet it cannot be gainsaid that they enter into the struggle for existence at a great disadvantage. Thousands, nay, hundreds of thousands, of young men and women with hereditary or acquired tendencies to various diseases are, owing to want of knowledge, brought up, enter upon occupations, and lead modes of life which inevitably result in disease and early death. Some have a tendency—a special morbid proclivity—to suffer from phthisis and others from strumous diseases. Some are liable to suffer from various diseases of the nervous system ending in insanity; and others from gout or rheumatism and the numerous diseases resulting from, or associated with, these diatheses. Others are rickety or syphilitic, while many are specially prone to suffer from catarrhal diseases resulting from exposure. Yet all these persons start the race of life with their burden of proclivity to disease on their shoulders or acquire it after the start; they enter pell-mell into the struggle for existence to compete with the naturally strong and vigorous. Without any guidance such persons in a haphazard manner eat, drink, dress, are crammed with education, acquire habits, take exercise, work, marry and are given in marriage, engage in occupations, and select places of abode without the least consideration of the effect on their own health or that of their offspring. The result is what might be expected. One after another they lag behind; they drop out of the race incapacitated. Many die, while others remain for a time as invalids to be supported by their fellow creatures; a few are able to continue in their employment and to attain to old age. They, however, propagate their kind and leave behind them others to take their place and to undergo the same disappointing experiences—"to whirl the round of false delights and woes that are not false." It is probable that after many generations these to a certain extent die out, in obedience to the laws which govern the "survival of the fittest," and this in spite of the fact that nature is "ever at toil to bring to loveliness all ancient wrath and wreck." But morbid tendencies can be acquired by others who from want of knowledge transgress the laws of health, and these tendencies may be transmitted to their offspring.

> "Nature will not be contemned of any one;
> Who thwarts it loses and who serves it gains."

Early physicians may have given too much prominence to, and placed too much reliance on, constitutions, diatheses, tendencies, and temperaments in their dealings with disease. Still, there is no doubt of the importance of taking into consideration the existence of a hereditary proclivity or diathesis as well as other acquired conditions of health predisposing to disease in forming a diagnosis or in following special lines of treatment. I am not, however, aware that sufficient attention has yet been drawn to the fact that the existence in individuals or families of indications of morbid proclivities to disease might be utilised as guides in giving advice for the prevention or mitigation of the various affections caused by, or found to be associated with, them. If a diathesis can be recognised by special indications before the occurrence of actual or well-marked disease a physician might be able in many instances to give such advice in regard to modes of living, diet, regimen, &c., as would mitigate the taint and prevent further mischief. Diathesis may be considered as an "exceedingly chronic disease or taint which lasts a life-time, which may be active at times and latent at times, and which may be transmitted from the parent to the offspring." Defining diathesis, Mr. Jonathan Hutchinson remarks: "As a persisting morbid proclivity we shall be able to show that in a great many instances, either by the aspect of the individual or the history of the case, a clear and definite opinion can be arrived at." Professor W. T. Gairdner states: "Nevertheless, it is quite true that diseases considered as disturbances of the physiological course of a healthy life are often marked by incidents which leave indelible traces, not only in the history, but in the physiological structure of the body; and it is the study of these, properly speaking, which affords to the well-informed physician almost the whole basis of objective facts out of which a morbid tendency or diathesis can be inferred with a fair amount of probability." The fact that many persons are more predisposed than others to suffer from some diseases or groups of diseases cannot be denied. Recent investigations tend to prove that some diseases hitherto regarded as hereditary may be caused by micro-organisms which have not yet been demonstrated as transmissible from parent to offspring. This has been done in regard to phthisis. It is, however, well known that some persons have a predisposition to suffer from phthisis that this special proclivity is stronger in some families than in others, and may be hereditarily transmitted. It has also been suggested that hereditary predisposition in the case of phthisis may have been mistaken for infection in early life or from infected houses or clothes. Call this special tendency what we will, a proclivity, a diathesis, a predisposition, or a latency of disease, there is no doubt of the fact that if such persons as bear such a burden could be picked out from among the community by any signs or indications, and advised against exciting the diseases to which they are liable, many of them would remain in good health and live to a good old age. My object in writing this paper is to show that this can be done in many instances, and to suggest that much good might result towards the prevention of diseases not directly affected by public measures, if individuals, and more particularly heads of families, while in health or before the occurrence of sickness were advised to seek the opinion of medical men possessed of the requisite skill and judgment with a view to guide them as to the best way of securing a continuance of good health for themselves and families. It appears to me to be perfectly evident that if this were done much sickness might be prevented and many lives might at least be lengthened. Disease would often be detected in its earliest and least notable form and when most amenable to treatment. Specialists in mental diseases have urged this for many years as an aid towards the prevention of lunacy. I shall endeavour to show that advice in health might also be equally beneficial in preventing numerous other diseases.

Diatheses, or proclivities predisposing to disease such as the scrofulous or strumous, the tuberculous, the insane, the gouty, the rheumatic, the rickety, the syphilitic, the catarrhal, the malarious, and others, can in many instances be detected by various signs or indications, and the numerous diseases caused by or found to be associated with these might be mitigated or prevented if advice were sought in time to guard against the agencies by which they are excited. It

may be remarked that very few of the diseases found to be associated with these diatheses are directly affected by public measures devised for the prevention of disease. There can, however, be no doubt of the fact that most valuable advice might be given to persons with special proclivities to disease with regard to their mode of living, their food and drink, their clothing, the exercise that should be taken by them, the amount of pressure to which their children might be subjected at school, the habits they should specially avoid, the occupations and professions best suited for them, the most healthy climates and places for residences, the healthiness of their dwellings, and even in regard to the selection of their partners for life with a view to the propagation of healthy offspring. Not only would such advice vary according to the diseases which would have to be guarded against and the strength of predisposition, but according to the age, means, circumstances, and social position of the individual. A man of means with a strong strumous diathesis, and threatened with catarrh or phthisis, might be advised to spend the winter in Egypt, to take a long voyage, or seek his fortune in Southern California, Colorado, or in Rhodesia; while in another case all that could be advised might be the removal from a town to the country or to a more healthy dwelling, to stop smoking and drinking, or try a different employment. It appears to me that too much attention has hitherto been paid both by the public and profession to the curative treatment of disease to the neglect of prophylaxis. The success of preventive measures over curative treatment in the city of Glasgow is well brought out by Dr. Russell in "The Evolution of the Functions of the Public Health Administration." He classified the deaths from 1855 to 1894 into (1) zymotic, (2) phthisis, (3) other diseases of the lung, and (4) all other causes. During the above period special efforts had been made by preventive measures to reduce the mortality from "zymotic diseases," while the group included under "all other causes" was only indirectly affected by improved hygienic measures, the main effort having been directed towards the cure of persons suffering from these diseases. If we compare the first with the last decades (in these two groups) we find the following result: a decrease of 51 per cent. in the death-rate from "zymotic diseases" and only a decrease of 12 per cent. in the deaths from "all other causes."

It is extremely difficult to devise a practical and acceptable scheme which might be of benefit in preventing such diseases as cannot be directly attacked by public measures. Many appear to think that the population can be educated to enable each individual to guard his own health. If it were the case, as is sometimes supposed, that hygiene resolves itself into water-supply and drainage this might be possible. These are undoubtedly of importance, but are only two of the many avenues through which disease finds an entry into the human system. The complexity and the variety of the conditions of life and laws of health are not realised. There are, perhaps, so many varieties and degrees of so-called health as there are of disease. The precautions that should be adopted by an individual or a family in order to secure a continuance of good health are in many cases numerous and varied. To imagine that by lectures or more methodical teaching it would in practice be possible to impart such information as would enable each individual to guard his own health or that of his family under varying conditions of life is as vain as to imagine that it might be possible to make each individual in this country sufficiently learned in the laws of the realm to enable him successfully to carry out the most extensive business and most complicated transactions without the aid of a lawyer. The ordinary individual is as ignorant of the laws of health as he is of the anatomy or physiology of his own body. The indications which might prove his proclivity to various diseases are as unknown to him as the symptoms of typhus fever or diphtheria. The precautions that should be taken by him with a view to secure a continuance of good health are about as clear to him as the treatment that should be adopted were he to suffer from typhoid fever or pneumonia. The struggle for life is so keen, and the strife to secure a competency bulks so largely in the mind of the ordinary individual that he has no time to study the laws of health. If he were convinced of its necessity or advantage he might take the advice of a skilled person for his guidance. In this, as in other matters, subdivision of labour is required. Many persons, although aware of possessing an hereditary tendency to disease have a kind of false delicacy or sensitiveness against making the fact known even to their family physician so long as they are able to keep it secret. Cases in which advice is spontaneously asked under such circumstances are comparatively rare. Well-informed physicians are often impressed with the necessity of making inquiry in regard to individuals and families before giving advice, but they are met with many difficulties. If they hint that an individual should seek advice, their object is liable to be misunderstood. They may be suspected of touting for practice. If they go to the trouble of making inquiry and of giving advice without being asked they must, in nine cases out of ten, do so free of charge; that is to say, they put themselves to much trouble and they give advice free of charge for the purpose of "cutting off the sources of their own income." Hitherto the energy of practitioners of medicine has almost entirely been directed towards the cure of disease. The bulk of the population do not as yet realise the advantage of seeking medical advice when in health. Indeed, very few are as yet aware of the fact that many of the diseases from which they suffer might be prevented. Persons are more grateful to a physician for his advice during his attendance on, say, a case of typhoid fever than they would be were he to devote ten times as much labour in preventing the outbreak. Our profession is noted for its self-sacrifice and benevolence, but I do not think it can be expected that hard-worked and ill-paid practitioners should, under these circumstances, exert themselves very much in this direction. It is not in human nature, and perhaps the difficulties to be overcome explain to a certain extent the slow progress made hitherto.

Here and there a few of the wisest and most far-seeing of the population appear to recognise the value of medical advice in health and to take advantage of it. I took the great liberty of writing to Mr. Gladstone on the subject and asking whether he was in the habit of consulting Sir Andrew Clark with a view to preserve his health quite as much as to restore it. The veteran statesman was good enough to inform me that "Sir Andrew Clark was intensely in earnest about preventive medicine," and that he (Mr. Gladstone) "derived much benefit from it through his means." The good health which Mr. Gladstone enjoyed, the exemplary life he led, the enormous amount of work he was able to accomplish, as well as the great age he has happily attained, even admitting a previously sound constitution, are sufficient to commend his method to all thinking men. His example might be followed with advantage by thousands of the population.

Some practitioners of medicine may not as yet be prepared to efficiently guide the population towards the prevention of disease. The university curriculum of the general practitioner has not even yet embraced this subject with the thoroughness that might be desired. It would be of much benefit if teachers of medicine, and more particularly of preventive medicine, were to formulate some concise practical information on this phase of the subject which could be applied in practice. At present a vast amount of information on morbid proclivities to disease lies scattered about in treatises on special subjects and in articles in various journals. In text-books of medicine authorities give only occasional detached paragraphs to this important subject or to prophylaxis. If the knowledge already acquired regarding the various diatheses, their indications and prophylaxis, were put into practical shape and embodied in handbooks of diagnosis and treatment of disease valuable information might be brought within the reach of students and busy practitioners who cannot afford to spend much time in reading special treatises or in ferreting out information from back numbers of various journals, even if such could be within their reach. Meanwhile much might be done in many instances if practitioners (should they suspect that their good intentions may be misunderstood, or if they do not consider it expedient to give advice) would urge on their patients, and more particularly on heads of families with hereditary or acquired predisposition to disease, the necessity of asking in consultation with them some specialist or physician who has paid attention to the subject with a view to guide them as to the best way to ward off disease and secure a continuance of good health. Attention might thus be gradually directed to the subject; the more intelligent portion of the community would in time come to see its advantages and "a little leaven leaveneth the whole lump." If much progress is to be made towards the prevention of many diseases, it is necessary that parents should realise the fact that they are the guardians of the health of their families, that individuals should realise that they are the guardians of

their own health, and that all should thoroughly grasp the truth of the old adage that "prevention is better than cure." It is only by taking skilled advice and guidance that it is possible in many instances to lead persons through the strait gate and along the narrow way which leads to health and longevity, "for wide is the gate and broad is the way that leadeth to" physical as well as moral "destruction, and many there be which go in thereat."

For the purpose of illustrating the possibility of diagnosing diatheses, and of giving valuable advice based on the knowledge acquired, it may be desirable to give a short *résumé* of the diseases found to be associated with the strumous or scrofulous, the tuberculous and the insane diatheses, their causes, the indications whereby these diatheses may be detected, and the advice that might be given with a view to secure good health or to prevent disease. It is, however, necessary to advocate caution against coming to a hasty conclusion in regard to the existence of a diathesis or morbid proclivity in any individual or family. It will be necessary to note details of previous facts in the history of the person as well in that of his parents any signs in the configuration of the body or organs indicating structural change or departure from a healthy condition brought about by previous disturbance of healthy physiological functions. His mode of life from infancy should be noted, any unhealthy agents to which he may have been exposed, the climate in which he lived, the sanitary condition of his dwelling, the nature and quality of his food and drink, his occupation, the state of his mind, the diseases from which he suffered, &c., &c. It is only after weighing the whole evidence that it is possible to arrive at a reliable conclusion as to the presence or not of a diathesis or morbid proclivity to disease.

STRUMOUS (OR SCROFULOUS) DIATHESIS.

These may be regarded as synonymous terms. The following are some of the diseases found to be associated with this diathesis; eczema impetiginoides, tinea tarsi, otitis externa, phlyctenular ophthalmia, chronic infiltration of the eyelids and lips, coryza, ozœna, tonsillitis with hypertrophy, bronchitis, catarrhal attacks, pyelitis, cystitis, pulpy degeneration of the joints, caries, chronic inflammation and degeneration of the glands. Strumous and scrofulous individuals also appear to have a special tendency to suffer from pulmonary phthisis and other tuberculous diseases. Many appear to regard the two proclivities—the strumous and the tuberculous—as entirely identical, as being both due to the invasion of the tubercle bacillus, while others regard them as distinct, but admit that the tubercle bacillus finds in scrofulous persons a particularly favourable nidus for its development if in any way it gains an entry into the system. For my purpose it does not much matter what view is taken of the relation of tuberculosis to the scrofulous diathesis so long as it is admitted that by any indications such proclivity or proclivities can be detected and the prevention of disease can be guarded against. The danger of catarrhal attacks in scrofulous subjects is only too well known. Bronchial catarrh, broncho-pneumonia, and diarrhœa have in such subjects a tendency to become chronic, leading to affections of the glands, which (if it gains an entry) shelter the bacillus tuberculosis, and ultimately may lead to phthisis.

Causes.—In the majority of cases there is a hereditary proclivity to this diathesis. It is much aggravated and probably acquired by unsuitable food, such as deficiency of fatty matter—butter, oil, and other forms of vegetable and animal fat—by climate, such as deficiency of sunlight and exposure to cold and damp, and by insanitary dwellings, overcrowding, poverty, and want of fresh air.

Indications.—In persons who bear this hereditary or acquired burden of proclivity to scrofulous disease there may be found "evidence of defective nutrition or emaciation extending back to childhood, and modifying the entire form of the skeleton as well as the integuments." "A slender form and a narrow or deformed chest may be accompanied by enlarged or inflamed glands." In many cases enlargements of the lymphatic glands in the neck, groins, or axilla are the first signs of scrofula, but the taint should not be assumed at once unless accompanied by more conclusive symptoms. The tendency of the glandular elements to breaking-down, caseation, and suppuration distinguish scrofula from leukæmic or pseudo-leukæmic lymphomata. There may also be signs of glandular abscesses or ulcers which were slow to heal and left cord-like cicatrices very like those of burns, or evidence of sinuses connected with the bones. There may be a delicate skin or it may be coarse, thick, and rough in cold weather. "It may be marked with traces of eruption on the scalp or elsewhere." Sooner or later pallor of the general surface appears, especially of the face, but in some cases the cheeks may be red, "even quite rosy." The fat does not necessarily disappear from the connective tissue and may even be present in larger quantities than usual. The eyes may be bright, with long eyelashes, or they "may have suffered in early youth from ulcerations and obscuration of the cornea, or from repeated chronic conjunctivitis and ophthalmia tarsi leading to thickening and granular condition of the eyelids." Tarsal cysts and dropping of the eyelashes, with hard thickening of the margin of the lids, are frequently observed. The upper lip may be thickened and may often look red and raw owing to acrid nasal secretion, or "it may be long and tumid from catarrh commencing with coryza oft repeated in early life." Chronic rhinitis, with redness and excoriations of the nostrils, are among the commonest symptoms. Offensive sero-purulent otorrhœa, which is generally bilateral, is extremely common. The muscles sooner or later get flabby and often the bones are attenuated and the joints large and sometimes ankylosed or actively diseased. The cartilages are often thickened or inflamed. "The upper portion of the abdomen may be increased in bulk owing to waxy enlargement of the liver, or there may be disease of the peritoneum or mesenteric glands distending more or less the whole abdomen." The circulation is generally feeble and there is often a history of repeated attacks of febricula or catarrh. There may be evidence of a strumous diathesis in one or both parents.

Prophylaxis.—As already stated, this diathesis is probably aggravated or increased by exposure to certain causes which have been detailed. These should as far as possible be guarded against. Children of scrofulous mothers should not be nursed by the mothers, but rather by strong, healthy wet nurses, or else brought up by hand. Special care should be taken against feeding such children on the milk of cows suffering from tuberculosis. The administration of milk should not cease when other food is supplied. As such children grow up they should be encouraged to drink sweet cream, eat butter and bacon, and take cod-liver oil. Mr. Hutchinson remarks that "probably there are few practicable dietetic changes which would be more beneficial to our population in reference to scrofula than a large increase in the consumption of butter and other animal fats." Every effort should be made to improve by suitable nourishment the faulty nutrition which is often marked in this diathesis. It must be kept in view that impairment of the digestive organs is often present. Every endeavour should be made to bring strumous children up in such a way as to invigorate them against the injurious effects of such exposure as they are liable to incur in after life. If possible they should be brought up in the country, and should be as much as possible in the open air. Care should be taken to protect them against chills and other slight ailments. Their clothing should not be superfluous, but such as to equalise and retain the temperature of the body. Flannel should be worn next the skin summer and winter. Active exercise in the open air should be practised, bathing should be indulged in, and the skin should be kept clean. Salt-water bathing, long continued and frequently repeated, has been found useful. Long rest in bed should be allowed and excessive study should be prohibited. The hardening of strumous children should be attempted with great caution. The amount and nature of the exercise to be taken, the advisability of cold or warm bathing, the avoidance of exposure to cold and damp outside or within their dwelling, the prevention of overcrowding, and the proper ventilation of their sleeping- and sitting-rooms day and night,—avoiding draughts and excessive heat or cold—should all carefully be considered. The dwelling should be as clean and dry as circumstances will permit and the ventilation should be as perfect as possible. The exposure to sunlight is of much importance. A sheltered locality should, if possible, be selected for residence, with a temperate, mild, and uniform climate and a dry soil. When grown up they should be guided as to the occupations least likely to prove injurious to them, and as to the country and climate that should be finally adopted by them for their residence, keeping always in view the advantages of a country life over that of a town. The intermarriage of scrofulous persons should be discouraged.

TUBERCULOUS DIATHESIS.

As already stated, many regard the proclivity to tuberculous affections as entirely distinct from the strumous, while others regard them as identical. "The undoubted tendency of scrofulous subjects to tuberculous affections does not by any means prove that the two processes are identical." It may rather be due to the fact that any tuberculous bacilli that have somehow got into the body find a particularly favourable nidus in the products of the scrofulous inflammation. In this material they continue to develop, and a more or less general infection of the body with tuberculosis may subsequently take place starting from these centres. Professor H. von Ziemssen remarks: "Experience forces on us the assumption that the absolutely sound human organism must have a great power of resisting the lodgment of the bacillus, and that the latter only finds permanent abode in the lungs, intestines, &c., when certain conditions are present favourable to the settlement and propagation of the micro-organism. These unknown pathological conditions we call the predisposition to tuberculosis, and mean by that a certain constitution of the tissues of the organism in virtue of which they afford a favourable soil for the settlement of the virus. Without the assumption of this, which may be inherited or acquired, we cannot proceed." The diseases found to be associated with this diathesis are the tuberculous affections of the various tissues and organs. The following may be mentioned as perhaps the most important—viz., pulmonary phthisis, tuberculous meningitis, tabes mesenterica, lupus, and various diseases of the joints.

Causes.—The proclivity to suffer from phthisis, whether associated with the scrofulous diathesis or not, is caused or aggravated by the same agencies as well as by worries, sorrows, looking after, and sitting up at night with, the sick, bodily or mental strain, restricted diet, previous illness, unhealthy occupations, &c.

Indications.—The following may be mentioned as the main presumptive signs of the tuberculous diathesis being specially marked in young persons. A slim figure, thin neck, elongated or flat chest. The muscles, especially those of the chest and neck, are but slightly developed; there may be want of symmetry or inequalities of the respiratory movements. Instead of the oblique direction of the clavicle being from above downwards and from without inwards the direction from above downwards may be sensibly horizontal. There may be persistent diminution of the respiratory force detected by means of Waldenburg's pneumatic apparatus. The limbs are thin and the complexion delicate; a venous network of blue colour is often transparent through the skin; and the bloodvessels of the mucous membrane are weak, with liability to epistaxis and laryngeal catarrh. There may be frequent attacks of palpitation and flushing (circumscribed malar redness) with pallid complexion generally. The hair and eyelashes are often remarkable for their length, the teeth are often well formed, and the eyes vivid, brilliant, and animated. There may be clubbing of the fingers or undue curvation of the nails. Myoidemn is frequently observed. The person is often impressionable, with exaggerated nervous excitability, with an unsteady character, and apt to be irritable. The repeated development of pityriasis versicolor and the existence of a red line on the gums are stated to be imminent signs of tuberculosis. Some or all of these are marked in many cases, but often several of them are absent. Their premonitory value is greater in proportion to the number present in any one individual. When such a constitutional condition is present in an individual with suspicious family antecedents, such as the death of a parent or member of the same family from phthisis, or even of a stranger in the same house under circumstances which might cause exposure to infection by the tubercle bacillus by the inhalation of tuberculous particles; if there are any signs of scrofulous affections in early life, such as caseous remains of cured scrofula in the lungs or glands, or in the form of pleuritic adhesions, endangering auto-infection; if there is anæmia or dyspepsia not amenable to ordinary treatment, with suspicion of the consumption of tuberculous meat or milk; if there has been hæmoptysis (not necessarily the effect of phthisis) or disorders of menstruation; if there are frequent vague pains of a rheumatoid character in the walls of the chest or upper extremities; if tubercle bacilli have been detected in the sputum or in the discharge from strumous or other sores—any or all of these are indications of the necessity of adopting immediate preventive measures.

Prophylaxis.—The object to be aimed at in the case of persons with the tuberculous diathesis, whether strumous or not, is to transform a soil which is favourable to the propagation of the tubercle bacillus into one which is not favourable for its development. In many cases prophylaxis, in order to be successful, should commence in infancy. If tuberculosis exists in either of the parents the infant should not be nursed by the mother, but by a strong, healthy wet nurse. Although the mother may be healthy she is in danger of contracting the disease from her intimate associations with her husband, she may convey infection indirectly to her child, and for her own protection it is desirable that her health and vigour should be sustained. The child should be kept as much as possible in a separate apartment and be as little as possible in the company of the parents. They should be cautioned against kissing and fondling the infant. Otherwise during infancy and childhood the same precautions may be adopted as already detailed in the case of the strumous diathesis. Valuable advice may be given to all persons who present indications of the tuberculous diathesis with regard to their mode of living, their food, clothing, and occupation, the most suitable climates and countries for their residence, as well as the healthiness of their dwellings. Any or all of these may prove of the greatest value in preventing them from becoming infected with the tubercle bacillus and in resisting its ravages even after its invasion. It has been fairly well established that after the bacillus gains admission into the system, and after even invading some organ, such as the lungs or lymphatic glands, the disease may remain latent if health is maintained, and the vital energy is not exhausted. Should the tubercle bacillus be detected in the sputum or in other discharges it will be necessary to give such advice in regard to isolation and the disposal of such infected matter, &c., as will guard against auto-infection and minimise the danger to others. Persons with this diathesis should endeavour to lead such lives as will protect them against infection by the tubercle bacillus and as will fortify their system so as not to afford a suitable nidus for its development should they become the victims of its invasion. They should if possible elect to reside in the country, a hilly country by preference; if possible at a high elevation, with a dry, temperate, and sunny climate. Their dwelling should be on a dry site above the level of the surrounding area, with free exposure to air and sunlight. The apartments occupied should be roomy and clean, well ventilated day and night, and in these latitudes look in a southerly direction. Their diet should be nutritious and substantial, avoiding slops and tea. New milk in moderate quantities and fresh from the cow, ass, or goat has been strongly recommended. Great care should be taken against the consumption of tuberculous meat or milk. The clothing should be warm, but not superfluous. Flannel should be worn next the skin. They should retire early and get up early. The chest should be bathed daily with cold water followed by vigorous rubbing with a rough towel. They should work or take exercise for several hours daily in the open air and guard against getting chilled or catching cold while tired and exhausted. By climbing or more methodical exercises their lungs should be made to expand. In some cases it may be desirable to resort to the inhalation of compressed air if the functions of the lungs are not properly performed at the upper or middle parts. Such employments as will necessitate much confinement indoors, overcrowding, worries, nightwork, or the inhalation of fine dust or débris should not be followed. Professor Ziemssen points out the high mortality from phthisis among the Sisters of Mercy in the Munich hospital, and the prevalence of the disease in convents, educational establishments, orphanages, overcrowded workshops, &c., as well as the immunity enjoyed by those engaged in agricultural pursuits as compared with industrial communities. In Switzerland the death-rate from tuberculous diseases is 2·55 per 1000 in industrial populations, whereas it is only 1·1 among those engaged in purely agricultural work. Persons presenting well-marked indications of the tuberculous diathesis should be discouraged from getting married. If preventive treatment is successful in restoring an individual to sound health marriage may be permitted in the case of males. In the case of females, however, repeated pregnancy and lactation are grave dangers which must be kept in view. The intermarriage of persons presenting indications of this diathesis should be discouraged.

THE INSANE DIATHESIS.

"As persons with the gouty diathesis may have no symptoms of gout, but only be liable to them on slight

occasions, so the insane diathesis is not insanity, but a standing and ever imminent threat of it. It is as real a fact as the diatheses of gout or of tubercle and as hereditary; not infrequently, indeed, generated *de novo* by insanitary conditions in the parentage, or in the fœtal or infantile life, but most frequently the outcome of hereditary predisposition." Numerous diseases are found to be associated with this diathesis. The various forms of insanity need not be detailed. Not only may the same form or type of mental disease descend from one generation to another, but one form may be succeeded by another of a different character or by other neuroses, such as epilepsy, chorea, hypochondriasis, paralysis, apoplexy, convulsions, hysteria, &c. Persons with a hereditary predisposition to insanity are not only liable to suffer from the insanities of puberty and adolescence, but from a vast number of other developmental neuroses, such as strabismus, night terrors, infantile paralysis, somnambulism, megrim, eye defects, instinctive immorality, dwarfishness, ugliness, joint diseases, &c.

Causes.—The most important cause of this diathesis is hereditary predisposition, more particularly in a direct line. The existence of insanity in the uncles and aunts of the preceding generation or in brothers and sisters also affords a strong presumption of predisposition. An attack of insanity in a parent after the birth or generation of a child may or may not, according to circumstances, be regarded as a proof of hereditary predisposition, but the danger is very great if the nervous system of the parent had been the seat of mental disorder prior to the generation of the offspring. Consanguineous marriage may or may not, according to circumstances, be regarded as predisposing to mental disorders. A predisposition cannot be inferred "from the bare fact of the relationships of the parents, but from fear of their having similar vitiation of constitution." Among the exciting causes may be included injury to the brain, intemperance, disappointed affections, and exciting occupations. Civilisation itself appears to act as an exciting cause, principally by causing "increased susceptibility of the emotions to slight impressions, by abuse of stimulants, by the amount of overwork to which the brain is subjected in early life through our over-wrought system of education," the moral sentiments, the lower propensities, and the intellectual faculties being subjected separately or combined through our mode of life to a great amount of excitement. It must also be kept in view that various kinds of mental disorders, hereditarily transmitted, are excited by special causes. "Inaction, in-door life, amusements" often increase the general brain excitability, and "solitariness, novel reading, and long hours in bed" aggravate "the morbid strength and often perversion of the generative nisus in persons predisposed to the insanity of adolescence." In persons predisposed to melancholia the disease may be excited by any of the great physiological crises of life, by loss of blood, overwork, want of sleep, over-anxiety, menstruation, unusual religious services, exciting preaching, &c.

Indications.—In persons with this diathesis strongly marked there is generally a delicate mental organisation or a limited mental calibre falling far short of imbecility, or an unbalanced mind which may in some of its faculties border on genius and in others on idiocy. The taint becomes manifest in many instances at a very early age. In a family with hereditary predisposition such indications in any of the children as precocity, over-sensitiveness, unhealthy strictness in morals and religion—for a child,—a too vivid imagination with commonplace parents, a habit of lying or stealing when well trained, want of courage, thinness, and a craving for animal food should be viewed with suspicion. "A kind of child-melancholy is sometimes exhibited at a very early age if there is a hereditary predisposition to melancholia." "A more frequent form, at least in the male sex, is a reckless spirit of audacity and defiance, of resistance to all rule, often accompanied in children by lying and cruelty, and passing with advancing years into outrageous irregularities of life and debauchery. Another form is that of overweening self-conceit and preposterous vanity, and yet another manifests itself in simply detestable temper and moroseness, varied with outrageous passion." "In some cases there is remarkably acute intellect of the cunning type." M. Moreau, in endeavouring to determine signs which give rise to fears that the children of the insane may suffer like their parents, and which of them are most likely to do so, found of 192 cases examined that in 164 of the number it had been invariably found that when the individual presented striking physiognomical resemblances to one parent he had been indebted for his cerebral organisation (and its defects) to the other. Thus personal resemblances and cerebral disorders may be transmitted by either parent, but rarely both by the same parent. There were seven cases in direct opposition to this law—i.e., the individual bore evident resemblance to the parent from whom he derived his cerebral organisation. In twenty-one cases it could not be decided which parent transmitted the cerebral organisation, this being identical in both. In persons bearing this diathesis there is sometimes an unsymmetrical conformation of the head and a want of regularity and harmony of the features. Malformation of the ears is stated to be sometimes observed. A special type of deformed palate has been noticed in a high percentage of persons suffering from the insanity of adolescence. Convulsions may have occurred in early life and have left spasmodic movements of the muscles of the face, eyelids, and lips. In some cases there may be stammering and defects of pronunciation. "The eyes, which, though full and prominent, may have a vacillating movement and vacantly abstracted, or half fearful, half suspicious and distrustful look. There may, indeed, be something in the eye wonderfully suggestive of the look of an animal. The walk and manner are uncertain, and though not easily described in words may be distinctly peculiar. ..... Without being insane a person who has the insane neurosis strongly marked is thought to be strange, queer, and not like other persons. He is apt to see things under novel aspects, or to think about them under novel relations which would not have occurred to an ordinary mortal," such as punning in words or the use of an idea in a double sense. Persons with the insane diathesis "often exhibit remarkable special talents and aptitudes, such as for music, calculations, prodigious memory for details when they may be little better than imbeciles in other things. ..... At one time they may be elated, at another depressed without apparent cause; they are prone to do things differently from the rest of the world. ..... The mental balance may easily be upset altogether by any great moral shock, or by the strain of continued anxiety, or by a great physical change in the system, such as the development of puberty, the puerperal state, or climacteric change. The effect of alcohol on such persons is in some respects special; it does not make them so much drunk as mad." Radcliffe states that "sometimes one or two only of the symptoms of incipient insanity are present to the exclusion of the rest." If all were present—an almost inconceivable case—he would enumerate them as follows: a state of intense self-conceit, moroseness, and misanthropy, great mistrust and suspicion, uncontrollable impulsiveness, melancholy, a warped state of intellect without actual delusions, irregularity of fancy showing itself in illusions and hallucinations, and lastly a tendency to delirious excitement. Wynter remarks that "it may be urged that if we refine too much in this direction the merest effects of temper and exhibition of eccentricity which constitute character will come to be looked upon and watched with suspicion as indicating a tendency to mental disease, and those only will be considered to be sane who possess ordinarily level minds without sufficient originality to go out of the beaten track. Such an error in reasoning no well-educated physician would commit, but he would note with suspicion any sudden change of a man's settled habits or revolution in his mode of thought." Forbes Winslow gives the following as signs of incipient insanity: "An altered state of the affections towards the relatives and friends, that alteration being often in inverse ratio to the former attachment, a difficulty in guarding against dislike, a restlessness of disposition, a disposition to magnify trifles, weakened volition, defective memory. The patient is inordinately depressed or elated by the most trifling circumstances; he manifests a restlessness and inability to concentrate his attention on any subject, he neglects his business, avoids the society of those with whom he formerly associated, becomes violently passionate about trifles, manifests a peevishness and impatience of contradictions; he exhibits an extravagance in all his thoughts and actions." It is evident that when these incipient indications of insanity appear preventive measures should be immediately adopted.

Prophylaxis.—In regard to matrimony every effort should be made by judicious advice to persons strongly tainted with this diathesis with a view to prevent the generation of progeny. The intermarriage of such persons should be discouraged unless the female is past the child-bearing period. No inflexible rule should be adopted in giving

advice in these matters. All the circumstances of each case should be taken into consideration. In certain cases persons may possibly derive some benefit from matrimony, but the risk of a family should always be kept in view. Like the strong and vigorous, an elective affinity appears to exist between persons of a neurotic taint, probably in obedience to the tendency of "birds of a feather to flock together." This is probably only one of the natural laws which by the production of healthy offspring on the one hand and unhealthy on the other lead gradually to the survival of the fittest and the elimination of the weak. Parents and guardians should be advised to prevent as much as possible the association of such individuals. They should "for their own safety and happiness live as much as possible among healthily constituted individuals and keep clear of the associations which constantly bring their inheritance before them prominently," and if marriage must follow to increase the chance of a partner possessing a well-constituted body and mind. Every endeavour should be made to guard persons bearing this taint—more particularly the half-witted and imbecile, and weak-minded females—from procreating children and perpetuating their kind by secluding them in houses of refuge, reformatories, and asylums where the sexes are kept apart. The large number of this class now kept in our asylums will no doubt in time affect beneficially the average mental standard of our population. The family physician should thus "oppose with all his influence the generation of hereditary lunatics, to conserve by his care the bodily and mental health of pregnant and parturient women, and thus to provide that infants may be born with brains capable of sane life, to watch during tender years, when mind is forming with marvellous speed, and to indicate the natural laws which must not be broken without peril to the mental health, and then to advise against pursuits, occupations, and professions which may seem dangerous to doubtful mental sanity."

Dr. Clouston remarks: "I think our profession could diminish the amount of melancholia if they were consulted sooner or more often as to prophylaxis in patients who have had, are threatened with, or who are predisposed to, states of mental depression." With regard to the prevention of mania he states: "We cannot do so surely, but that we can do something in the direction of lessening the tendency of the brain to mania I have no doubt." "A vast majority of the insane become so in consequence of physical conditions of life and modes of living which lead to the result as certainly and as evidently as insanitary conditions of physical life lead to typhoid fever or tuberculosis." It is therefore necessary to guard, so far as possible, against all the causes which have been found to produce or to aggravate the insane diathesis. To be successful it is desirable that prophylaxis should begin at an early age and be continued more or less through life. The physical and mental health should be carefully guarded. "A too sensitive child should always be looked after. Children of this class take crying fits and miserable periods on slight provocation; such children should be kept fat from the beginning. They should get little flesh diet and much milk till puberty. Their brain should not be forced. They should be much in the open air. They should not read much imaginative literature too soon. They should be brought up teetotalers and non-smokers. They should sleep much. Public school life is often most detrimental to them. If they are bullied they suffer frightfully. If they are taught masturbation it takes a frightful hold of them, and it is they who are ruined by it in body, mind, and morals." "Such children should be taught to systematise their time and their lives and to develop their fat and muscles." All children with the insane diathesis should be as much as possible "brought up under the influence of strong and wholesome minds who will apply wise culture to the erring emotions and discipline to the conduct in the early years of life." In this manner insanity may often be prevented. A public or private school is often preferable to home discipline; some will do better in one and some in another. Instead of decrying our admirable system of education as a whole owing to the pressure it bears on weakly constituted children it might be wiser to advocate the classification of such children in accordance with the pressure that should be brought to bear on them in the process of education; or in populous centres, there might be provided separate departments, or even separate schools, for such children where youthful ardour and strife in competing with the naturally strong and vigorous would not be so keenly exerted or so likely to lead either to excessive physical or mental strain. The schoolmaster for such children should be carefully selected. He should be "methodical, patient, with command of his temper, having self-denying industry and much knowledge of child nature." The studies of such children should not be too severe or too complicated or stimulating to the imagination or passions. Their physical health should always be carefully guarded—their food, clothing, and exercise. Their training, as a whole—mental, moral, and physical—is particularly necessary at the periods of adolescence and puberty. "The primary laws of physiology might with advantage be taught at this age, and some truths in a guarded way should be communicated to them by their elders about their reproductive system, which to many, especially to those of the neurotic family, is the cause of many uneasy feelings, wonderments, and doubts." When grown up such people should be guided with regard to the occupations or professions to be followed by them. So far as possible they should lead calm lives and engage in some regular and orderly occupation. They should not enter on hazardous occupations or professions, such as the army or navy, they should not be stockbrokers, election agents, or speculators, or enter into such professions as require exhaustive brain work or are associated with petty worries, such as the medical or legal. "Positions with fixed salaries are most desirable for them. They should cultivate quiet hobbies." If possible they should select country occupations and become farmers and colonists. Sexual intercourse should be avoided until after adolescence. For women "the regulated life of a convent or sisterhood, or systematic religious and philanthropic work fulfils the conditions of prophylaxis better than anything else"; but exciting preaching, unusual religious exercises, and revival meetings should be avoided. Fortunately, the poor in many rural districts are even yet, in spite of the excitement and worries of life in populous centres, favourably circumstanced for the prevention of insanity. The poet's picture to a certain extent still holds good:

> "Far from the madding crowd's ignoble strife,
> Their noble wishes never learn to stray;
> Along the cool sequestered vale of life
> They keep the noiseless tenor of their way."

The preceding remarks on the strumous and tuberculous diathesis are based on the writings and teaching of the following authorities: Mr. Jonathan Hutchinson of London, Professor Gairdner of Glasgow, Sir T. Grainger Stewart of Edinburgh, Professor R. G. Graves of Dublin, Professor H. von Ziemssen of Munich, Professor R. Henoch of Berlin, Professor S. Jaccoud of Paris, and others. And the remarks on the insane diathesis are based on the published writings of the following: Dr. Forbes Winslow, Dr. Clouston, Dr. J. C. Bucknill, Dr. D. Hack Tuke, Dr. Radcliffe, Dr. Wynter, Dr. J. A. Campbell, M. Moreau, and others. At the risk of being branded as a plagiarist I have endeavoured to convey the meaning of these eminent authorities as much as possible in their own language, although I found it impracticable always to insert inverted commas.

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ARTERIAL ELASTICITY.

BY PROFESSOR THOMA.

IN THE LANCET of Sept. 19th, 1896, Dr. G. A. Gibson published a criticism of the conclusions which I have arrived at as the result of my investigations regarding the elasticity of the arteries which I cannot allow to pass unnoticed. In this paper Dr. Gibson apparently leaves it to be inferred that in the first volume of my "Text-book on General and Special Pathology" I have disregarded the very valuable researches of Roy, and further accuses me of very grave "misconceptions regarding arterial elasticity." In the first place, Roy's important investigations were carried out in connexion with some physiological questions, which, although they have great bearing on pathology, are not really relevant to the explanation of the pathological processes under consideration at that part of my book. In the course of his work Roy also proved the existence of some pathological changes in the elasticity of the vessel walls, but these had already been demonstrated by less accurate methods, by Polotebnow[1] for instance. These

[1] Polotebnow: Berliner Klinische Wochenschrift, No. 35, 1868.

pathological changes, which Roy proved to be present in the arteries in various diseases, but which he did not follow up completely, consisted in a diminution of the elastic distensibility for given changes in the blood pressure within the arteries. This is an indication of arterial sclerosis, and if Roy found no structural changes, either microscopic or macroscopic, in the diseased arteries of the dog the reason is simply that the arteries in the dog react differently from those of man. In the dog the new formation of connective tissue in the intima does not occur for a very long time after a pathological dilatation of the artery has taken place, so that the stage of arterial disease which in man is accompanied by a slight diffuse arterial sclerosis produces in the dog merely a "permanent set" and a diminution of distensibility, as Roy[2] clearly shows in his researches. The "permanent set" has as a direct consequence the loss of distensibility, as Roy also seems to assume, since he expresses himself as follows: "Only a part of the curve given by normal arteries remains." Roy has also observed the same changes in elasticity in morbid conditions in the arteries in man, but has not dealt fully with them. My opinion is that from the characteristic physical conditions he describes in the arteries in man we may conclude that in all probability slight diffuse sclerosis was present in the intima, although he gives us no information concerning the microscopic appearances.

In my own investigations, however, I have shown, first by anatomical and histological methods[3] and afterwards by physical methods, in collaboration with my pupils,[4] that various forms of overstrain and general disturbances of metabolism involve the walls of the bloodvessels and give rise to an increase of distensibility which I regard as of fundamental importance for the production of arterial sclerosis. The result is that the arteries are more widely distended and are lengthened by the blood pressure. The increase in length is the cause of the greater tortuosity of the diseased arteries, while the dilatation in this as in all other cases gives rise to a new growth of connective tissue in the intima, which again narrows the lumen and restores it to the shape and width necessary to adapt it to the blood stream. This newly formed connective tissue in the intima has very little elastic distensibility, and, therefore, the vessel-wall regarded as a whole loses some of its distensibility. This modification in elasticity—viz., the diminution of distensibility of the vessel-wall—has been long known owing to the frequency with which arterial sclerosis occurs and the high degree which it reaches, although Polotebnow and Roy were the first to establish it by physical methods.

I cannot here discuss the numerous results which the course of these investigations has brought out, as they have already been fully dealt with elsewhere. They have been only briefly referred to in the first volume of my text-book on General and Special Pathology, as I had no reason to enter more fully into the investigations of Polotebnow, Roy, Israel,[5] Grunmach,[6] and others on the subject, since, although they are of the greatest value otherwise, they have no direct bearing upon the important point in the question with which I was concerned—viz., the pathological increase of distensibility in the walls of the bloodvessels. In the second volume of my text-book, which will shortly appear, and in which the diseases of the walls of the bloodvessels are exhaustively treated, Gibson will find that I have not omitted the names of the above-mentioned writers.

I will now proceed, in the second place, to discuss the main charge made by Gibson—my so-called "misconceptions regarding arterial elasticity." These misconceptions are presented by Gibson in a very arbitrary manner. When an artery is more distended than normally by a given amount of blood pressure Gibson uses the term "increase of elasticity," whereas I call it a "diminution of elasticity." Out of this there naturally arises a long series of involved misunderstandings, although one might think that the mere perusal of the context of my book would easily have given the clue to my meaning. Those who care to seek it further will find it unmistakably given in my special papers. In order to make the misunderstanding between Gibson and myself somewhat clearer I shall cite two of his quotations: "Lord Kelvin says, 'Elasticity of matter is that property in virtue of which a body requires force to change its bulk or shape and requires a continued application of the force to maintain the change, and springs back when the force is removed, and if left at rest without the force does not remain at rest except in its previous bulk and shape.'" The second quotation is from Tait, and is as follows: "Elasticity, in the correct use of the term, implies that property in a body in virtue of which it recovers, or tends to recover, from a deformation." If we accept these definitions as the basis for further discussion the question next arises, How can we experimentally investigate the elasticity of a body? Works on physics show that this has been done by estimating, under various conditions, the relation of the distorting force or stress to the amount of distortion or strain. It was thus found that in inorganic bodies, such as steel, iron, copper, &c., within certain limits strain is always proportional to stress. If P is the measure of stress and p the measure of strain, then $P = Kp$. In this formula the value of K depends upon the properties of the material, but is at the same time a constant value for each material. The constant value K thus appears as a measure for the strain to which the body is subjected by the stress P. Therefore, $K = \frac{P}{p} = \frac{\text{stress or distorting force}}{\text{strain or distortion}}$. K is the term used for co-efficient of elasticity by physicists and engineers, and is therefore greater the greater the stress which is required to produce a certain amount of distortion. We must bear in mind that this constant value K does not suffice to describe all the peculiarities of that property of a body known as elasticity. It gives no information as to whether the elasticity of a body is perfect or not. A perfectly elastic body is one which returns exactly to its original form after removal of a force which has caused a deformity. The above definitions, quoted from Kelvin and Tait, show this. Such bodies, on the other hand, as manifest permanent deformities, which persist as changes in their dimensions after the cessation of the action of a force, may be called imperfectly elastic. The limits of elasticity would be further defined by the measure of the smallest stress or strain which produced permanent changes in dimension.

Elasticity is a property common to all bodies, and it may quite well be doubted whether there is such a thing as a perfectly inelastic body. Even lead, which in ordinary life is regarded as quite inelastic, is not wholly so. Wertheim has even determined for lead the above coefficient of elasticity, K. On the other hand, if there is no perfectly inelastic body, neither is there any perfectly elastic body, since a certain amount of deformity is always left after the action of a force, although in many cases it is very slight and may only appear after long-continued application of the force. It is, therefore, highly interesting to determine experimentally the degree of incompleteness of the elasticity of each body. This is done by the empirical determination of the limits of elasticity. In determining these it is necessary to introduce an arbitrary value into the discussion, since it must be assumed, from what has been said, that each demand upon the elasticity of a body leaves a slight permanent deformation. The limit of elasticity can thus be fixed, for example, as the weight which when applied to a wire one metre long and one square millimetre in cross section lengthens it permanently by 0·05 millimetre. This weight is approximately 43 kilogrammes for a steel wire and 250 grammes for a lead wire. Another method is to determine how many millimetres such a wire (one metre long) must be stretched in order to produce a permanent elongation of 0·05 millimetre. For a steel wire 2 millimetres and for a leaden wire 0·14 millimetre is, according to this second method, found to be the limit of elasticity.

After the determination of the limits of elasticity it might be interesting to consider the breaking strain and the changes produced in all these results by variations of temperature. However all the principal elements which admit of an estimation of the elastic properties of a body are defined. How do we arrange our investigation in dealing with the walls of the arteries? Evidently the determination of the limits of elasticity is in this case only of minor importance, since during life the arteries are so nearly perfectly elastic

[2] Roy: Journal of Physiology, 1880 1882, vol. iii., p. 144.
[3] Thoma: Virchow's Archiv für Pathologische Anatomie, vols. xciii., xcv., civ., cv., cxi., cxii., and cxiii.; Deutsches Archiv für Klinische Medicin, vol. xliii.
[4] Thoma and Kaefer: Virchow's Archiv für Pathologische Anatomie, vol. cxvi. Luck: Ueber die Elasticitätsverhältnisse der Arterienwände, Dissertation, Dorpat, 1889. Lunz: Ueber das Verhalten der Elasticität der Arterien bei Vergiftungen mit Phosphor, Quecksilber, und Blei. Dissertation, Dorpat, 1892.
[5] Israel: Virchow's Archiv für Pathologische Anatomie, vol. cili.
[6] Grunmach: Archiv für Anatomie und Physiologie, Physiologische Abtheilung, 1879. 1883.—Virchow's Archiv für Pathologische Anatomie, vol. cii.

within the limits of the variations in blood pressure, that it is only late in life or in consequence of serious disease and over-straining that a slight stretching can be made out, in the form of a very slowly progressive dilatation of the arterial system. The arteries of the dead body behave differently even immediately after death. If the pressure within them be temporarily raised to the height of the normal blood pressure they never perfectly return to their original width and thus manifest a certain loss of elastic quality due to the cessation of nutrition and innervation. Their elasticity has become less perfect, but this loss of elastic quality which occurs after death need not be considered in dealing with living arteries. Indeed, it has been usually disregarded for this reason, even by those authors who have noted it in their measurements. Gibson is therefore wrong when he says of Roy's experiments: "In all these experiments the extent of distortion from which there was perfect restoration to previous form and bulk has been correctly taken as the measure of the amount of elasticity." The words "from which there was perfect restoration to previous form and bulk" cannot, as we have just seen, correctly be inserted here and were never employed by Roy. Their omission would give the sentence a very different meaning.

The limit of resistance to rupture in the vessel walls is also of some importance. A normal artery can withstand an internal pressure of several atmospheres, while under pathological conditions the increase of distensibility of the vessel wall is accompanied by a great lowering of the limit of resistance to rupture. The artery may then rupture with an internal pressure of from sixteen to thirty centimetres of mercury. This is of great importance in relation to the formation of aneurysms, but is of less value for the questions here discussed. These considerations have led all writers who have studied the elasticity of the walls of arteries and other tissues in man and animals to regard the ratio between stress and strain as the essential point, whether they, like Roy, determined the variations of cubic space within the arteries at different pressures of their contents, or, like myself, observed the variations in the linear dimensions of the vessel-wall. In this instance Weber[7] and Wertheim[8] arrived at a result of general importance. They stated that for organic tissues the ratio between stress and stain is not constant, the strain growing much slower than the stress, the curve of distension being very nearly a hyperbole.

The ratio between stress and strain, besides being the main object of our experimental investigation, yields us also the measure for the elastic properties of the vessel wall. If an artery shows greater distensibility within the limits of its elasticity to a given blood pressure Roy and Gibson regard it as more elastic, thus using the word in its popular sense, according to which distensibility is the most important property in the elasticity of a body. Hermann,[9] myself, and others, however, adopt the opposite acceptation, as I have stated definitely elsewhere[10] as follows: "Elasticity is a property of matter the measure of which is the amount of force which, during stretching, the particles of matter oppose to the change of their original equilibrium. I thus speak of increased elasticity when a greater force or a higher blood pressure is required to distend the vessel wall to the same multiple of its linear dimension, and I consider those arteries feebly elastic in which the walls are relatively largely distended by slight stretching or by low blood pressure." This definition is also contained in the sentence quoted by Gibson from my text-book: "The elasticity of the vessel wall and therefore the resistance which it offers to stretching, &c." My use of the term also is in complete agreement with that of Kelvin and Tait who state: "Hence the elastic quality of a perfectly elastic, homogeneous, isotropic solid is fully defined by two elements—its resistance to compression and its resistance to distortion." The amount of uniform pressure in all directions per unit area of its surface required to produce a stated very small compression measures the first of these and the amount of the shearing stress required to produce a stated amount of shear measures the second. The numerical measure of the first is the compressing pressure divided by the diminution of the bulk of a portion of the substance which when uncompressed occupies the unit volume. It is sometimes called the elasticity of volume, or the resistance to compression, or the modulus of compression. The second, the resistance to change of shape, is measured by the tangential stress divided by the amount of distortion or shear which it produces, and is called the modulus of rigidity, or for brevity, rigidity, of the substance, or its elasticity of figure."

It is quite clear that the difference between the use made by Roy and Gibson of the word "elasticity" and the use which I have made of it depends merely upon an abbreviation of the expression, "ratio stress to strain." The question is, Which of these two abbreviations is the proper one? The use of the word "elasticity," preferred by Gibson and Roy, corresponds fairly closely with the popular meaning, whereas the sense in which I employ it is that ordinarily used by scientific men in explaining the nature of elasticity.

As regards the elasticity of the arteries there is still another fact to be considered. When the arterial walls are implicated in some general disturbance of metabolism or are subjected to over-exertion their distensibility under given alterations in blood pressure is increased—their resistance to stress is less. Gibson must term this shortly an increase of elasticity produced by morbid conditions, whereas I believe that the term diminution of elasticity is preferable, since not only the distensibility but also the tendency to rupture of the vessel wall is increased, and is in many cases combined with fatty degeneration of the walls.

I believe that I have now sufficiently justified my opinion and do not consider it necessary to discuss the other items in Gibson's extraordinary paper, nor shall I touch upon the question of the retinal pulse, in regard to which Gibson betrays complete ignorance of the facts and of the investigations which I published on this subject in Von Graefe's *Archiv*. I purposely abstain from expressing any opinion as to the manner in which Gibson has chosen to attack me, knowing that I may confidently leave this to the judgment of his fellow countrymen.

Magdeburg.

[7] M. Weber: Poggendorff's Annalen, vol. liv.
[8] Wertheim: Annales de Chimie et de Physique, série iii., vol. xxi., 1847.
[9] Hermann: Handbuch der Physiologie, vol i., i., p. 7., Leipzig, 1879.
[10] Thoma: Ueber die Elasticität der Netzhautarterien; v. Graefe's Archiv für Ophthalmologie, vol. xxxv.

SEVENTEEN CASES OF DIPHTHERIA WITHOUT A DEATH—FIFTEEN TREATED BY ANTITOXIN.

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THE following cases occurred in our practice during the present year; a few of them we have cast for convenience in a tabular form.

CASE 1.—A girl nine years of age began to ail on Feb. 14th and on the following day complained of sore-throat. On the 17th, when the child was first seen, the breathing was rapid, being mainly through the mouth. The patient did not seem to be very ill; the temperature was 99° F. and the pulse was 112 and fairly good. Both tonsils were much enlarged and were completely covered with membrane. A small patch which was on the palatal arch was like washleather in appearance; 10 c.c. of antitoxin were injected. On the 18th the temperature was 101° and the pulse was 104 and fairly good. The membrane had extended half over the palate; 10 c.c. of antitoxin were administered at 6.45 P.M. The membrane in the throat had become more extensive. The temperature was 100° and the pulse was good, being 112. On the 19th the child was not so well. The breathing was entirely oral. A good deal of thick purulent discharge came from the posterior nares. The membrane was more extensive. A good amount of urine was passed, and it contained no albumin; 10 c.c. of antitoxin were injected in the evening. On the 20th the patient was much better; there was less membrane, and what remained was loose. On the 21st the child was very well. The throat was quite clear. The urine was abundant and it contained no albumin. The temperature was normal. On the 22nd tingling in the left foot was complained of; the left patellar reflex was less marked than the right. The throat was clear and the pulse was 68 and very irregular. On the 24th the temperature was normal and the child felt well; the pulse was steady and numbered 54. An urticarial rash over the arms and legs had appeared; on the

following day the rash was fading. On the 29th there had developed what appeared to be an attack of acute rheumatism; the knees were principally affected. The temperature was slightly elevated. Sodium salicylate was given and the attack passed off in two or three days. On March 8th the patient seemed to be quite well; the reflexes were present. There was no albuminuria and the urine was abundant. Slight chronic enlargement of the tonsils was present. On April 5th the child was in perfect health and was so on Oct. 15th.

CASE 2.—This patient, who was not treated by antitoxin, was an unmarried woman aged twenty-two years. On Feb. 15th she went to stay in an infected house. On the 17th her throat felt sore. On the 19th she had shivering, fever (temperature 101° F.), and vomiting. There were diphtheritic patches on both tonsils. A gargle of hydrargyri perchloridium (1 in 1000) was ordered to be used constantly. On the 20th the temperature was normal and the patient felt better. The throat was more comfortable, and there was less membrane. On the 21st the patient felt quite well. The temperature was normal. There was no membrane. On March 8th there was no return of membrane and no sequelæ.

CASE 3.—The patient was a girl aged one year and a half. She had been ailing for some days with catarrh (nasal and bronchial). On Feb. 23rd the nose and throat were much stuffed up. The throat was completely full of membrane and purulent matter. The membrane extended to the tip of the tongue. The child was very ill. 10 c.c. of antitoxin were injected at 11.30 A.M. In the evening she was no better. Respiration was laboured and she was ordered a carbolic steam kettle. On the 24th the patient was much worse and she had laryngeal stridor. In the evening the stridor was more pronounced. There was slight recession of intercostal spaces and slight cyanosis. The throat was much clearer. The temperature was normal. 5 c.c. of antitoxin were injected. On the 25th the breathing was worse during the night; stridor was very marked in the morning. There were jactitation, cyanosis, and marked recession of interspaces. Chloroform was administered and tracheotomy performed with difficulty. Parker's tube was inserted. The child was pulseless and respiration ceased. Restoratives were administered. The temperature at 10 P.M. was 103·4° F. On the 26th the child breathed much more freely since the operation and had taken food better. The tube was removed constantly. There was thick muco-purulent discharge coming from the lungs. On the 27th the cough had been very troublesome and the tube was constantly blocked. There was not much membrane visible in the throat. On the 28th the child was very sick and restless. On the 29th she was *in statu quo*. On March 1st the child vomited all her food, but peptonised foods were retained. The tracheotomy tube was left out; the child breathed better without it. On the 2nd the patient had a very restless night. On the 3rd there was a good deal of diarrhœa. The tracheotomy wound looked rather inflamed and was discharging pus. It was dressed with cyanide gauze soaked in eucalyptol every half hour. On the 7th the patient was taking food well. The cough and discharge ceased. The trachea wound was quite closed and granulating healthily on the surface. The child was quite herself and playing about. On the 10th the patellar reflexes were absent. She would not take anything of a sloppy nature, as fluids regurgitated through the nose. There was incontinence of urine. She was taking food well and putting on flesh. On the 12th the regurgitation was not so marked. Breathing was not so good. The pulse was 120, irregular, but fairly good. On the 17th breathing was normal. On the 31st the patellar reflexes were still absent. There was no regurgitation. The child could not stand at all. The incontinence continued, but the general condition was good. On April 3rd she had a sharp attack of diarrhœa, but was well on the 5th. On the 7th the patient was sent away. She was seen a month after and was then quite well. The voice was still rather husky.

CASE 4.—The patient was a girl aged two and a half years. On March 11th she was seized with vomiting. The temperature was 101·6° F. The pulse was 164 and weak. There was a small, thin, diphtheritic patch on the left tonsil; 10 c.c. of antitoxin were injected at 11 A.M. On the 12th the child was taking food well. The membrane on both tonsils was thicker, but loose at the edges. The temperature was normal. There was incontinence of urine. On the 13th the child was taking food well. The temperature was normal. The throat was much clearer. Only a small piece of membrane remained hanging. The incontinence continued. On the 15th the throat was quite clear. There was no incontinence. The patellar reflexes were absent. On the 17th the patient was improving. There was regurgitation of fluids through the nose and the voice was becoming nasal. There were no reflexes. On April 3rd the swallowing and voice were normal. She had an attack of diarrhœa. The temperature was 101°. There was blood in the motions. On the 5th the diarrhœa yielded to treatment. On the 7th the child was sent away for a change, and when seen a month later was quite well.

CASE 5.—Male aged seven weeks. On Jan. 8th he had been ailing all day. In the evening symmetrical patches of white, firmly adherent membrane were seen on both tonsils. The temperature was normal and the pulse poor. The fontanelle was much depressed. 8 c.c. of antitoxin were injected at 7 P.M. and brandy was ordered. On the 9th the child was much better and was taking food well. The throat was clearer. On the 10th he was improving. The throat was almost clear. On the 11th he was doing well. The throat was quite clear. On the 29th he was quite well. He had had no signs of neuritis or albuminuria and was putting on flesh rapidly. On March 8th he remained well.

CASE 6.—The patient was a woman aged thirty-two years. On Jan. 5th her throat was rather tender and swollen. On the 6th she felt chilly. There was no rigor. The temperature was 100·8° F. There was a small diphtheritic patch on each tonsil. At 10.30 A.M. 15 c.c. of antitoxin were injected. At 4.30 P.M. the temperature was 102·2°; the pulse was good (124). On the 7th the temperature was 101·2° and the pulse was 120. In the throat the membrane was more extensive, involving almost the whole of both tonsils, but seemed looser; the patient had expectorated one piece of membrane. The urine was abundant; there was no albumin. She felt much better. At 7.20 P.M. more membrane was expectorated. On the 8th the temperature was normal and the throat was almost clear. Swallowing was much easier. The patient said that her throat was more comfortable than it had been for years. The right patellar reflex was absent. On the 9th the throat was much clearer and more comfortable. There were no reflexes. The urine was abundant; there was no albumin. On the 10th the temperature was normal; the throat was quite clear and there were no reflexes. On the 19th the patient had an attack resembling acute rheumatism, with pains in every part of the body. The temperature was 99° and there were slight reflexes. On the 22nd the patient had an acute rheumatic attack. The temperature was 99°. Salicylate of soda and bicarbonate of potash were ordered. The rheumatic pains continued until the 26th and the temperature rose to over 100°. An urticarial rash appeared all over the chest; there was no swelling of the joints. By the 28th the rash had disappeared, the temperature was 99°, there was no pain, and the patient felt very well. On Feb. 19th a patch of what appeared to be diphtheritic membrane was seen on each tonsil. A gargle of perchloride of mercury (1 in 1000) was given. On the 21st the throat was found to be clear; and on March 8th the patient was quite well and there had been no sequelæ.

CASE 7.—A female child aged three years and nine months, who had been ailing since the previous day. In the evening of Nov. 25th, 1895, she complained of sore-throat. The mother said that the glands at the angles of the jaws were swollen and tender, but that she could see nothing wrong in the throat. The patient slept well at night. On the 26th the mother saw membrane on the tonsils. I saw the child, whose temperature was 100·5° F. and the pulse was rapid and fairly good. The uvula and the adjacent parts of the palate and both tonsils were covered with white, tough, firmly adherent membrane. The glands at the angle of the jaw were swollen and tender. At 3.30 P.M. 10 c.c. of antitoxin were injected. The consequent swelling soon subsided. At 9 P.M. the temperature was 101°. The throat was clearer and the membrane looked thinner. The respiration was very snoring in character, not laryngeal. A mixture containing borax and iron was given every four hours and brandy was administered. On the 27th at 10.30 A.M. the temperature was 101°; the pulse 160, weak and compressible; and the child had a bad night and seemed worse. The throat was clearer and the membrane looser, but none had separated. The respiration was very rattling through nasal obstruction. There was no dyspnœa. Brandy and a steam-kettle containing carbolic acid were ordered.

TABLE OF EIGHT REMAINING CASES IN SEVENTEEN CASES OF DIPHTHERIA WITHOUT A DEATH.

—	Sex.	Age.	Date of disease.	Antitoxin used; doses and dates.	Bacteriological examination.	Reaction.	Remarks.
Case 10.	Female.	25 years.	July 30th, 1896.	British Institute of Preventive Medicine. July 30th, 10 c.c.; July 31st, 10 c.c.	None.	None.	Mild case of diphtheria. The temperature did not rise above 102° F. There was membrane on both tonsils; began to peel off rapidly after the second injection. The throat was quite clear on Aug. 2nd. The patient was removed on Aug. 6th by desire of friends. The throat was then clear and there were no sequelæ.
Case 11.	Female.	10 years.	April 12th, 1896.	British Institute of Preventive Medicine. April 12th, 1896, 10 c.c.	None.	On April 25th there was a very sharp attack of acute rheumatism in all the joints; the patient was unable to move. There was an urticarial rash all over the body lasting for 24 hours.	Mild case. Treatment began early. There was membrane on both tonsils, but not very extensive. The throat began to clear on April 13th and was quite clear next day.
Case 12.	Male.	8 years.	April 12th, 1896.	None.	None.	None.	Very mild case. Treatment by tinctura ferri perchloridi; recovery in a few days.
Case 13.	Male.	5 years.	April 6th, 1896.	British Institute of Preventive Medicine. April 12th, 10 c.c.	None.	None.	Very bad case. Membrane had been seen in the throat for nearly a week. The case was first seen on April 12th, when the child was almost suffocated. He was cyanosed, with stridor and rib recession. The throat was full of membrane and bloody pus. Antitoxin was injected as a forlorn hope. On April 13th there was marked improvement, especially in breathing. There was less membrane. The throat cleared in four days and the child made a perfect recovery.
Case 14.	Female.	9 years.	Began to ail on Nov. 9th. She had sore-throat on the 10th.	British Institute of Preventive Medicine. First dose, 15 c.cm. 8.30 P.M. on Nov. 11th; 10 c.c. 8.30 P.M. on the 12th; 10 c.c. 8.30 P.M. on the 15th. (The other treatment consisted of sprays of perchloride of mercury and boracic acid solution.)	Pure cultures made by Dr. Kanthack.	Severe; rashes began nine days after first dose; roseola, papules, and urticaria, chiefly on chest and abdomen. The temperature rose the same day. On the fourteenth day it reached 103° F. Joint pains and swelling were marked.	Very severe case of diphtheria. There was membrane all over both tonsils, above the palatal arch, and round the uvula. The maxillary glands were much enlarged. There was a trace only of albuminuria on two days—one-tenth on one day during the rise of temperature. Secretion of urine was abundant continually. On the twentieth day the patellar reflexes failed, paraplegia occurred, and the voice became nasal. These signs of neuritis only lasted ten days in spite of their severity. After each dose the membrane cleared up remarkably and the child improved in general condition for about twelve hours. The cardiac action was profoundly affected. The pulse remained irregular and intermittent for a month.
Case 15.	Male.	14 years.	May 17th, 1896. Sore throat 3 days.	British Institute of Preventive Medicine. 10 c.cm., May 20th, 6.30 P.M.; 10 c.cm., May 21st, 2 P.M.	Cultures of diphtheria bacilli were obtained by Dr. Hewlett.	No rash or apparent reaction.	Chronic epileptic; he was unconscious for several days during the beginning of illness, but had no convulsions. The tonsils, uvula, and palatal arch were covered with membrane. There was much enlargement of the glands. The membrane disappeared in two days. The urine was not examined.
Case 16.	Male.	6 years.	—	British Institute of Preventive Medicine. One dose, 10 c.cm.	These patients were not examined bacteriologically; they were both brothers of the foregoing and in the same room.	None.	The tonsils and uvula were covered with thick grey membrane. The glands were much enlarged. There was a trace of albumin in the urine for five days, beginning on the tenth day. The voice was nasal thirty days after onset for over a week. Patellar tendon reflexes were absent after previous exaggeration.
Case 17.	Male.	4 years.	—	British Institute of Preventive Medicine. Two doses, 10 c.cm.		Slight urticaria and erythema on the buttocks; there was no rise of temperature or pains. Injection made in buttocks.	The tonsils and uvula were covered with grey membrane; the glands were much enlarged. The pulse was irregular and rapid for about a week. There was no albuminuria. The voice was nasal twenty-eight days after onset for one week. Patellar tendon reflexes were absent.

At 7 P.M. the temperature was 101° and the pulse was stronger (140). The throat was full of membrane. Valentine's meat juice and brandy were given as before. The child slept well. The bowels had not acted since the onset. The child had not complained much of her throat. On the 28th the temperature was 101° and the pulse was stronger (160). The same regions in the throat were covered with membrane, which was thicker and firmer, and the throat was full of sanious purulent matter, which appeared to come from the posterior nares. Respiration was about the same; there was no discharge from the anterior nares. The patient had taken nothing all night. At noon 10 c.c. of antitoxin were injected followed by some local swellings. The child complained of a pricking. At 7 P.M. the temperature was 101·8° and the pulse improved in tone (144). The aspect of the case had improved; the patient had taken milk (half a pint with brandy as before since morning). The membrane in the throat was thicker than before. There was no laryngeal involvement. She was worse during the night, but on the following morning (the 29th) at 10.30 A.M. looked more herself. The respiration was quieter and the bowels had acted freely. The temperature was 99·8° and the pulse 132. There was the same amount of membrane in the throat, which had become very white and was getting loose at the margins. There was a large slough on the uvula. At 7 P.M. 10 c.c. of antitoxin were injected, and were followed by pain over the cardiac region, but there were no physical signs. The temperature and pulse were the same as in the morning. On the 30th the child was much worse: she had taken nothing during the night. The temperature was 99 8°; the pulse was 140, very weak, and compressible. The throat was about the same. Brandy was administered every hour with Valentine's meat juice. At 7 P.M. the child was brighter, had a better colour, and had played with toys. The temperature was 99·6° and the pulse was much stronger (120). In the throat there was the same amount of membrane, which looked like separating. The respiration was quiet and normal. The bowels acted well; the glands were subsiding and less tender, and the patient passed plenty of urine. She passed a good night. On Dec. 1st, at 11 A.M., the temperature was normal, the pulse 120, and the respiration was very slow, but there was no embarrassment or obstruction in the nose. The throat was very much clearer, and a good deal of membrane had separated, leaving a dirty brown sloughy surface. On the 2nd the temperature was 99°, the throat was almost clear, and the urine contained a good deal of albumin. On the 3rd the throat was quite clear, about five ounces of urine were passed in twenty-four hours, and there was less albumin. On the following day the patient remained the same. On the 5th fifteen ounces of urine (half albumin) were passed in twenty-four hours; and on the 6th and 7th the urine was less in amount, but there was more albumin. On the 8th two ounces of urine were passed in twenty-four hours, being very thick with albumin; on the 9th half a pint was passed with less albumin; and on the 10th three-quarters of a pint in twenty-four hours, but no albumin. On the 11th, 12th, and 13th the urine measured about one pint in twenty-four hours and was normal. On the 19th the child seemed very lively and well. The heart had become very irregular, but there was no bruit. The patellar reflexes were absent. The temperature had been normal since the 3rd. On Feb. 22nd, 1896, the child suddenly complained of sore-throat, vomited, and refused food. The temperature was raised. Both tonsils were covered with membrane, which had the same appearance as at the first onset. She was treated with perchloride of iron in five-minim doses every two hours and a spray of perchloride of mercury and water (equal parts). On the 25th the throat was quite clear and the child was perfectly well; and she was doing well when seen at the end of March.

CASE 8.—A boy aged four years. On Dec. 28th, 1895, he had been ailing all day; he was feverish, but he had not vomited. A calomel powder was administered. On the following day he complained of sore-throat; the bowels had acted. On the 31st the throat was worse. When seen in the evening the temperature was 99·2° F. and the pulse was 120 and very good. The respiration was entirely oral, there being nasal obstruction. Both tonsils were completely covered with thick, grey membrane. 10 c.c. of antitoxin were administered. On Jan. 1st, 1896, the child was not so well. In the throat the membrane was thicker and more extensive. There was no laryngeal involvement. 10 c.c. of antitoxin were administered at 9 P.M. On the 2nd he was better; the temperature was normal and the pulse was 90°. The throat was clearer. On the 3rd the condition had improved; the throat was almost clear and the glands were subsiding; in the evening the throat was quite clear and the condition much improved. The improvement continued until the 7th, when the patellar reflexes were absent and albumin appeared in the urine. The temperature had not been above 99° since the 3rd. On the 8th the temperature and pulse were normal. No reflexes were present. The urine was abundant and contained less albumin. On the 9th he passed less urine and there was still slight albuminuria. The mother said that his voice had become quite like a girl's and weaker. On the following day the right patellar reflex was returning. On the 14th the voice had become more normal and on the 17th it was quite nasal; swallowing was good on the latter date. On the 19th no reflexes were present; the voice was very nasal. His mother said that he took much longer to drink anything than he did formerly. On the 22nd the voice sounded as if the boy had a cleft palate. There was slight regurgitation of fluids through the nose. On the 26th the voice was more normal and there was not so much regurgitation; the pulse was 140. On the 29th the reflexes were gradually returning. The boy was very well and ate heartily. On March 8th the voice was normal and no regurgitation was present. The legs were still rather weak and the gait was awkward, but otherwise he was quite well. He was sent to the seaside and made a perfect recovery.

CASE 9.—This patient, who was not treated by antitoxin, was a boy aged thirteen years the subject of old infantile paralysis. On May 29th dirty ash-coloured membrane was seen on the tonsils and uvula. He had been ill four days and his case was considered too late for antitoxin. The treatment consisted of frequent swabbing of the fauces with perchloride of mercury solution and boracic acid gargles. On the 31st the membrane was found to be clearing. On June 2nd the patient had several fainting attacks and attacks of dyspnœa. The pulse was very slow, 48, and irregular. Breathing was very slow. The urine was very scanty for several days (once only 4 oz. in twenty-four hours), but no albumimuria was noted. In the third week he was quite paraplegic for about a week. There was complete absence of knee-jerks. There were no palate symptoms. Complete recovery ensued within six weeks.

Remarks by Mr. RUSSELL.—The antitoxin used was obtained from the British Institute of Preventive Medicine. In all the cases examined pure cultures of bacillus diphtheriæ were obtained by Dr. Hewlett. The diagnosis was verified in Cases 1, 6, 7, and 8. The injection was made under the skin over the ribs with antiseptic precautions, and in no case was there any sign of local inflammation. Cases 1 and 4 complained of a good deal of pain at the site of injection for some hours afterwards. The patients in Cases 1, 3, 5, and 8 were all children of the patient in Case 6 and occupied the same room. Case 5 was weaned directly the mother fell ill with the disease. The patient in Case 2 (sister of the patient in Case 6) was also in the house. Cases 11, 12, and 13 occurred in one house, all the children occupying the same room and were undoubtedly cases of diphtheria, as was Case 10, though the diagnosis was not verified.

Remarks by Mr. MAUDE.—Several of these cases were of exceptional severity, particularly Case 14. The later cases, under both Mr. Russell and myself, were milder in type. In Case 14 the symptoms were severe, the dose of antitoxin was large, the reaction was severe, and the diphtherial neuritis was very profound and widespread, but it was also very short. She had also marked clonic twitching of the limbs for two days. Goodall has remarked that this condition may occur independently of severe albuminuria, as in this case; it is a symptom of grave augury. The exaggerated knee-jerk which Herringham pointed out some years ago as the precursor of its disappearance was noted in one case. Seventeen cases of diphtheria without a death, one case being seven weeks old, is a gratifying record.

Westerham.

GROSVENOR HOSPITAL FOR WOMEN AND CHILDREN.

The Grosvenor Hospital for Women and Children, Vincent-square, Westminster, has received twenty guineas from the Merchant Taylors' Company.

CASES OF MENTAL ENFEEBLEMENT; RECOVERY.

BY FLETCHER BEACH, M.B., F.R.C.P. LOND.,
PHYSICIAN TO THE WEST-END HOSPITAL FOR NERVOUS DISEASES; FORMERLY MEDICAL SUPERINTENDENT, DARENTH SCHOOLS FOR IMBECILE CHILDREN.

IN THE LANCET of July 22nd, 1893, I described the physical, moral, and intellectual treatment of feeble-minded children, and I now proceed to relate the history of three cases in which the treatment was successful and recovery took place. All the cases were of a high type, and the mental deficiency supervened after birth.

CASE 1.—A girl aged twelve years was admitted into the Darenth Schools on Feb. 22nd, 1884. The father suffered from phthisis and the mother from heart disease. There was a history of phthisis on the father's side, but none of neuroses on either side. The mother was an only child. Both parents were temperate and not connected by consanguinity. There had been four older and ten younger children, of whom seven were dead; several of these had convulsions during teething. There was no history of miscarriages. The patient was said to have been born without defect. When she grew up she went to school, where she got on well until the previous March, when small-pox caused the death of four children in the house where the mother let lodgings. The patient was very frightened and would get under the bed when the ambulance came to take the children to the small-pox hospital. The mother said the fright seemed to "turn her brain." She had never had fits. On admission she was a well-nourished child, of fair complexion, and with good use in her limbs; hearing and speech were good; and the head measured 19½ in. in circumference, 12¼ in. transversely, and 11 in. in the antero-posterior direction. She was cheerful and good-tempered, could read and write, and had some knowledge of arithmetic. She was sent to the schoolroom and at the end of eighteen months could read, write, spell, count, distinguish colours well, and tell the time. She could knit and make articles of clothing. She was improving steadily and made herself useful, though occasionally she had outbreaks of temper. A month afterwards she was removed from school and sent to the workroom. In March, 1886, it was noted that she was making good progress in the workroom and was very useful in the ward. She had given no trouble for some time. In August, 1887, she was discharged recovered.

Remarks.—In this case there was a history of phthisis, which is a frequent predisposing cause. On analysing the histories of 1180 cases some time ago I found that phthisis was given as a factor in 383, or 32·45 per cent. There was also a neurosis present, for several of the other children had had convulsions during teething. This neurotic condition I found to exist in many cases and is proved by the fact that in 10 less than 338 of the 1180 children above mentioned there was a history of convulsions in other children of the family in which the case of feeble-mindedness occurred. The instability of the brain due to these two predisposing causes was easily upset by an exciting cause, and in this case the fright of the child which, the mother said, "seemed to turn her brain," was quite sufficient to upset the mental balance and produce the condition which caused the patient to come under treatment. The child was born in an apparently good physical and mental condition, so that the case belongs to the "acquired" class of feeble-mindedness.

CASE 2.—A girl aged eleven years was admitted into the Darenth Schools on Dec. 6th, 1883. The parents were both healthy, but the father was a very great drunkard. There was no history of hereditary disease, or consanguinity. The child was born at full time and labour was easy. It was alleged that the mother was illused by her husband and was very anxious and troubled during pregnancy. At birth the child appeared to be normal, and walked and talked at the usual time. When two years old the mother noticed a lump on the back the size of a marble, said to be due to a fall. As the child grew up she went to school and was very quick at her lessons, but at times was subject to fits, after which she appeared strange and occasionally stupid. She had had several fits during the three months before admission. There had been seven children, but four had died. The patient was the second child. The other two were in good condition mentally and physically. On admission she was found to be well-nourished, of fair complexion, with slight angular curvature of the spine. The head measured 19⅝ in. in circumference, 13 in. transversely, and 14 in. antero-posteriorly. She had fair use of her limbs, was cheerful and contented, good tempered, and was clean in her habits. Hearing and power of speech were good. She was subject to fits. Her mental capacity was fair. She could read from the first part of the First Standard reading book, transcribe on a slate, and work addition and subtraction sums. She knew the colours and could make underclothing neatly. She was sent to the schoolroom and bromide of sodium in doses of fifteen grains three times daily was ordered. At the end of eighteen months she could read from the Second Standard, spell words of two syllables, and understand addition, subtraction, and multiplication sums. The fits had ceased. In the following September she was very troublesome while in school, but this fit of temper soon passed off, and she worked steadily at her lessons. At the end of another year it was found that she could read fluently, spell words of three syllables, write from dictation, work long and short division and compound addition sums, say the pence tables and tell the time. She had improved so much that she was allowed to take a class of little children in the schoolroom. She made steady progress. For the next four years she acted as monitress in the school, and finally on Dec. 13th, 1892, she was discharged as a patient and kept on as a monitress.

Remarks.—In this case there was a decided history of intemperance on the part of the father, who is described as being "a very great drunkard." This is an important predisposing cause, as it was found in 231, or 19·57 per cent. of my cases. As a rule in these cases the alcoholism was more marked in the father, but in twelve cases the mother was inebriate, and in seven cases both father and mother were intemperate. In a few cases intemperance was found to be a family failing; in three cases all the father's side of the family drank, and in one of these the male side of the family had given way to drink for many generations. Besides this predisposing cause, the mother of this patient was badly treated by her husband and was very anxious and much troubled during pregnancy. It is necessary to accept with caution what parents say to us regarding this cause, for they often ascribe the mental deficiency to anxiety and worry when other more important causes are present. In this case there was not only anxiety and trouble, but ill-treatment by the husband, so that we may fairly say that this condition played an important part. With two such grave predisposing causes it is not surprising that epilepsy supervened in the child. This condition was present in 136 of the 1180 cases, or a percentage of 11·52. Children of this class, in which there is strong hereditary predisposition, have unstable brains, and then a fall, a fright or some other exciting cause is sufficient to produce the epilepsy, and weakness of intellect is the result. This case also belongs to the "acquired" class.

CASE 3.—A girl aged eleven years was admitted into Darenth Schools on Dec. 6th, 1883. The only history that could be obtained was that the mother was a patient in an asylum. On admission, she was a well nourished, dark complexioned girl with good use of her limbs. Her head measured 19¾ in. in circumference, 13 in. transversely and 14 in. in the antero-posterior direction. She was not subject to fits. She was bright, cheerful, active, good tempered and clean in her habits. Her special senses were well developed, and her mental capacity was fair. She knew all the letters, could spell several words, write all the small letters, add two and three with objects, repeat "twice times" tables, and knew several colours. She could hem fairly. She was sent to the schoolroom and at the end of two years could read from the first part of the First Standard reading book, spell a great many words of one and two syllables, write from dictation, transcribe in a copy book, work addition and subtraction sums, and say "seven times" tables. She made shirts and pinafores and was steadily improving. After two years' more attendance at school she could read from the Third Standard reading book and had improved in spelling and writing. At the end of another two years she was able to do multiplication and short division sums, read fluently, and write neatly. Two years afterwards she was made a monitress in the schoolroom and it was noted that mentally she had much improved. Finally, on Dec. 13th, 1892, she was discharged as a patient and kept on as a monitress.

Remarks.—In this case there was a history of inherited mental disease, the mother being in an asylum. This factor

was present in 210 of my cases, or 17·79 per cent., so that it plays an important part as a predisposing cause. There is no doubt that heredity of mental affections is not the exception but the rule. Moreover, hereditary diseases in their descent are frequently interchangeable one with the other. Long ago Moreau of Tours said, "It shows an incorrect conception of the law of heredity to look for a return of identical phenomena in each new generation. A family whose head dies insane or epileptic, does not of necessity consist of lunatics or epileptics, but the children may be idiots, paralytics, or scrofulous." The passion for drink is not always transmitted in that identical form, but often degenerates into mania or idiocy. This was illustrated in Case 2. Again, cases are on record in which there was deaf-muteness in the parents, and this was transformed in the children into an infirmity of some other description, such as hardness of hearing or obtuseness of the mental faculties.

The cases I have related are all illustrations of persons with unstable brains, or, as Maudsley describes it, "individuals who, by reason of bad descent, have native nervous conditions which are unstable or defective, rendering them unequal to bear the severe stress of adverse events. The cause of this fault is not insanity alone in the parent, but other nervous diseases such as hysteria, epilepsy, paralysis, and neuralgia of all kinds." In my cases there was no history of the last-mentioned causes, but in a paper of mine on Some of the Uncommon Causes of Imbecility,[1] I related three cases in which the apparent cause was chronic neuralgia, nervousness, excitability, and paralysis.

Kingston-hill, S.W.

X RAYS.

BY JOHN MACINTYRE, M.B., C.M. GLASG., F.R.S. EDIN.,

SURGEON FOR DISEASES OF THE THROAT AND NOSE, GLASGOW ROYAL INFIRMARY.

ON DIFFERENT CONDITIONS OF THE TUBE UTILISED FOR DIFFERENT EFFECTS.

ONE of the most striking suggestions yet made in connexion with the x rays is that of Professor J. J. Thomson to the effect that the x rays are not all of one kind. I have made a series of experiments in the hope that different conditions of the tube might be utilised for different effects in photographing or looking at the shadows of different tissues. Whether it be a matter of difference of intensity or difference in quality, as Professor Thomson says, there can be no doubt that when the tube is in a certain condition the bones may be seen as black shadows with almost no evidence of the soft tissues. On the other hand, when the tube is in a different condition the bones of the hand may be seen somewhat faintly lying in a well-marked shadow of the soft tissues. The plan adopted was first of all by means of heat to bring the tube into a particular condition, watching carefully the effects upon a fluorescent screen. Having obtained this various plans were tried, such as placing rings of metal near the cathode, but in contact with the earth and adjustable in the sense that they might be approached to, or withdrawn from, the ring going to the cathode outside of the tube. The idea might be explained in the following way. When the vacuum of the tube alters sparks begin to fly over the tube, and it occurred to me that if we could make the metal adjustable and bring it, earthed, near and at the proper distance from the cathode the tube would be cut out by the current finding its way back to earth. On the other hand, if the metal were withdrawn a certain distance from the cathode the tube would once more become illumined. Having made this adjustment it will be seen that directly any alteration in the inside of the tube took place the current would find its way from the cathodal wire to this ring of metal near the cathode and then to the earth, and a small break in the continuity of this wire would show sparking across the gap, indicating at once the necessity of applying heat to the tube. The moment this was done the sparking ceased at the wire and the tube became once more fluorescent. It was found, however, by using the discharge rods in front of the coil that the same result would be got in a simpler way. The plan I, therefore, finally adopted was to heat the tube until I had got it into the condition desired. I then caused the discharge rods to be approximated until the tube was cut out and a discharge occurred across the gap between the rods; one of them was again slightly withdrawn until the focus tube became once more fluorescent. This gave me a guide to any change taking place in the vacuum, because the moment the current had a difficulty in passing through the tube sparking began across the gap between the discharge rods. By placing the Bunsen burner at the proper distance and regulating the amount of heat comparatively little trouble was experienced in keeping the screen in that particular condition for long periods. The screen appeared uniformly luminescent; there was almost no flickering, and one could, to a certain extent, arrange to see the bones only or the soft tissues, as I have already indicated.

Mr. Campbell Swinton's idea of altering the vacuum by placing a magnet below the tube was tried, but, unfortunately, it does not, as far as I can judge, work well with the ordinary focus tube. Such an arrangement, whereby one could alter the vacuum by means of a magnet and so dispense with the Bunsen burner, would be of great service, and if Mr. Campbell Swinton can carry this valuable suggestion to a thoroughly satisfactory issue it will aid medical science considerably in future investigations.

THE INTRODUCTION OF THE USE OF THE CAMERA.

We have yet no direct means whereby the x rays may be refracted or reflected so as to give a picture, but the thought occurred to me that it might be useful to photograph the fluorescent screen with shadows of objects thrown upon it by means of the ordinary lens and camera. The advantage of so doing will be at once evident because large plates are expensive and difficult to manipulate. The arrangement which is described in the above paragraph, whereby the luminescence could be kept uniform and steady for a period, was the first essential. Having obtained this I set my camera with the ordinary lens in front of the fluorescent screen, and had no difficulty in focussing some metallic objects, the hand, &c., and could distinctly see the reduced pictures of these on the ground glass. I then put a cap on the front of the lens, exchanged the ground glass for an ordinary slide containing a dry plate, and having lifted the shutter of the latter photographed in the ordinary way, the exposure being 1 min. 50 sec. In developing I had a very fair picture of the screen, and also, to my surprise, a picture of the lens and brass mountings of the camera. This was a very interesting demonstration. It was evident I had two forces at work on the photographic plate, the one being the ordinary light from the fluorescent screen, which, of course, was focussed by the lens, and the image therefore was due to converging rays. On the other hand, the second force was x rays which had passed through the fluorescent screen, but diverging gave me an enlarged picture of the brass mountings and lens. In my second experiment I put a sheet of lead in front with a round aperture in it through which the lens might pass, and this time I got a photograph of the luminescent screen only, the x rays having been stopped by the lens and lead. I tried the experiment with different screens, but found the potassium salt better than the barium. In this connexion it must be remembered that the former gives a bluish or violet light and the other a some what yellowish green. Should this method prove successful one would be able to reduce large pictures of the body to magic-lantern or other sizes at once.

OBSERVATIONS ON FLUORESCENT SCREENS.

From the above it will be noticed that while most workers have been desirous of obtaining more x rays from the tube we are not utilising what we have already at our hand. While so many rays had fallen upon the screen and rendered it luminescent many were passing through it and in sufficient quantity to give a picture on a plate four feet removed from the screen itself. Having made this observation I next placed three screens in front of each other one foot apart, and while these were all luminescent I had a sufficient number of rays still passing through the third to give me a shadow of the bones of the hand on the fourth screen. Taking advantage of this observation I made another series of experiments upon the thickness of salt and size of crystal

[1] American Journal of Insanity, July, 1888.

which would give the best results, and am now advantageously employing a large screen on which the crystals are coarser than previously used and the thickness very much increased. By this means I have no difficulty in seeing many of the deep structures of the body in movement, and the pictures of the heart and diaphragm are better than anything I have previously seen.

Glasgow.

RECURRENT MYXO-SARCOMA OF THE SCAPULA IN A PATIENT AGED SEVENTY-SIX YEARS;

REMOVAL OF CLAVICLE, SCAPULA, AND ARM; RECOVERY.

BY E. F. ELIOT, F.F.P.S. GLASG., L.R.C.P. EDIN., &c.

THE following case is, I think, worthy of record as illustrating how remarkably patients at an advanced age can endure severe surgical procedures.

In September, 1892, I was consulted by a patient of the age of seventy-one years. She complained of pain and a lump in the region of her right scapula. I regarded the growth as probably of a malignant nature and advised its immediate removal. I removed the tumour on Sept. 24th, 1892; it was of a firm consistence and about the size of a small orange and encapsuled. On microscopical examination it proved to be a fibro-sarcoma with a large amount of fibrous tissue. The patient made a very good recovery, but within two weeks the growth reappeared and grew with great rapidity. I advised further removal, but the patient was doubtful whether at her age it would be expedient to operate. Mr. Jonathan Hutchinson was asked to come down in consultation, and he advised very free removal of the growth and no attempt to close the wound. This we did the same evening, removing the growth by two large elliptical incisions; after the hæmorrhage had been arrested the wound was powdered with iodoform and left to granulate. The patient made an excellent recovery and was quite well a few weeks afterwards. Since then, up to May 1st, 1896, I have operated twelve times as follows: (1) September, 1892; (2) October, 1892; (3) November, 1893; (4) March, 1894; (5) July, 1894; (6) September, 1894; (7) January, 1895; (8) June, 1895; (9) September, 1895; (10) October, 1895; (11) January, 1896; and (12) March, 1896. The growth invariably recurred, but varied somewhat in structure, being sometimes of a much softer consistence. In operations No. 9 and No. 12 I exposed the capsule of the shoulder-joint. After operation No. 9 the growth returned very rapidly, and I then suggested a radical procedure in the shape of removal of the scapula and upper limb, but it was deemed more prudent to continue to remove the growth locally, which I did. After operation No. 12 I quite decided that nothing would induce me to operate again unless I removed the entire limb, and I advised my patient to do one of two things—(1) to leave it alone altogether, or (2) to submit to a radical operation. I did so for these reasons: (*a*) that I was convinced that the growth could not be dealt with locally; (*b*) that the shoulder joint was becoming involved as well as the axilla and arm; (*c*) that I considered in the event of a radical operation, though the growth would very likely recur, the patient would be saved the pain of a large ulcerating mass in the axilla, and the pain and weight in the arm; and (*d*) that I believed she would stand the shock of the operation. I therefore advised operation in order to mitigate future suffering and not with much idea of curing the condition. The patient, who throughout had evinced the most remarkable pluck, decided that if my opinion was confirmed she would submit; she accordingly consulted Mr. Henry Morris, who was of opinion that the operation should be done for the reasons I have given above. I, therefore, on May 31st, 1896, operated. I may say here that the patient was rather corpulent and that she had not lost any flesh during her illness. My two main objects in the operation were—(1) to do it as rapidly as possible, and (2) to have as little hæmorrhage as possible. Chloroform was administered by Mr. R. F. Chance and I am greatly indebted to Surgeon-Colonel W. F. Stevenson and Surgeon-Major Whitehead for their most valuable assistance during the operation. Every precaution was taken against shock. The patient was wrapped in cotton-wool, and had an ounce of brandy half-an-hour before the operation. I first made an incision over the outer half of the clavicle and cleared the bone, cutting the outer third away with bone forceps. I then searched for the subclavian artery. It was very deeply seated, and I had to cut away a further portion of the clavicle. I then exposed the subclavian, passed a double ligature round it and tied it in two places, but did not divide the artery. The pulse at the wrist ceased immediately the ligature was tied. The ligature was applied to the first part of the subclavian. Having secured the artery I continued the first incision over the shoulder and down the front of the arm well clear of the growth. I then made a sweeping incision right round the scapula and into the axilla to the first incision. I rapidly detached all the muscles, got my hand under the scapula, and detached it. It only remained to sever the muscles round the joint, divide the brachial plexus, and the limb and scapula came away. There was practically no hæmorrhage. I had to ligature six bleeding points. The hæmorrhage from the posterior scapular artery was completely controlled by ligature of the first part of the subclavian artery. I saw the axillary artery and vein and placed a ligature round them. The patient lost far less blood at this operation than she had done at the previous operations. I washed the wound out with solution of corrosive sublimate (1 in 2000) and commenced to suture the wound up. The edges came into accurate position with thirty-eight sutures. I dressed the wound with iodoform gauze pads. The operation lasted in all fifty-eight minutes, thirty minutes of which were occupied in tying the subclavian. I feel sure this was a very wise precaution as the subsequent hæmorrhage was trifling, and I do not think in the end it materially prolonged the operation. The pulse never flagged during the operation and there was no sign of any shock. The patient, who was seventy-five years of age on the day of operation, sat up for two hours on June 7th, seven days after the operation. She made an uninterrupted recovery. She had a good deal of pain chiefly referred to her fingers, but this pain is passing away. At the present time (Oct. 10th, 1896) there is no sign of any recurrence. She has had a small abscess due to a silk ligature, which has now worked out, and the place is healing up. The temperature only once reached 100° F. and in a very few days was normal.

I sent the specimen to Mr. Henry Morris, who very kindly sent me a report saying "the growth was a myxo-sarcoma. Indeed, the piece taken for section proved to be almost entirely myxomatous, but there were sarcomatous elements in other parts of the specimen." Before the last operation the growth was rapidly extending into the axilla causing intense pain and swelling of the arm. And even now if the growth recurs I think she will be more comfortable and will suffer less pain.

Southampton.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.—The annual distribution of prizes and certificates was held in the board room of St. George's Hospital on Oct. 29th, at 3 P.M. Dr. Wadham, formerly Dean of the School, presided and made the distribution. The following prizes and certificates were awarded:—To Mr. Adrian Caddy an Entrance Scholarship in Arts of £145; to Mr. Hubert St. George Goldsmith an Entrance Scholarship in Arts of £50; to Mr. John Henry Tallent, B.A., and Mr. Beaumont Percival, B.A., both of St. John's College, Cambridge, Entrance Scholarships in Science of £85 each; to Mr. Horace Middleton Vernon, B.A., the William Brown £40 Exhibition, the Brackenbury Prize in Medicine, and the Brodie Prize in Surgery; to Mr. Charles Ralph Keyser the Brackenbury Prize in Surgery; to Mr. Henry Goodridge Deller, B.A., the Webb Prize in Bacteriology; to Mr. Harold Merriman Cooper the Treasurer's Prize; to Mr. John Howell Evans, B.A., the Acland Prize; to Mr. Henry George Drake-Brockman the Henry Charles Johnson Prize in Anatomy, the second year's General Proficiency Prize, and a Certificate of Honour in Physiology; to Mr. Lawrence Pick the Pollock Prize in Physiology; to Mr. Henry Neville Coltart the Sir Charles Clarke Prize; to Mr. Wentworth Francis Tyndale the third year's General Proficiency Prize; to Mr. Harold Robert Dacre Spitta the first year's General Proficiency Prize; Certificates of Honour in Anatomy to Mr. Frederick Paul and Mr. Arthur S. Morley; a Certificate of Proficiency (second year) to Mr. Miller Neatby, M.A., and a Certificate of Proficiency (first year) to Mr. Lidbrook Frank Cope.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF INTUSSUSCEPTION IN A CHILD EIGHT MONTHS OLD; RECOVERY.

BY E. HARVEY SUTCLIFF, M.B., M.R.C.S. ENG., L.R.C.P. LOND.

BEFORE leaving for a country round on Oct. 5th I received a message to see a child in a neighbouring village, who had been taken very ill in the morning. On reaching the place I found that the patient, a baby aged eight months, had been suffering from dyspeptic symptoms for some time, but that the child had been taken much worse during the last twelve hours. The child now appeared to be in a good deal of pain, the pulse was very rapid, and the patient had the appearance of being very ill. The child vomited every few minutes, the vomit consisting of undigested milk. I examined the abdomen carefully and could detect nothing abnormal, so left to continue my journey, intending to call again, as I should pass the house on my way home. About two hours afterwards I again visited the child. I found the patient a good deal worse, and a slight discharge of mucus and blood was expelled from the anus every time the child strained at stool. I examined the abdomen again and found in the left iliac fossa a sausage-shaped tumour which extended also into the hypogastrium. The tumour was soft and elastic and seemed to vary in size at different examinations. On examining per anum I found protruding into the rectum a body which moved each time the child cried and seemed to approach nearer the anal orifice at each expulsive effort. This body was soft and elastic and the finger could pass all round it, but could not reach its attachment. The lower part of the rectum was full of blood-clots and some mucus. The child had passed a normal motion in the morning prior to my visit. The sickness continued, but was more frequent. The abdomen was very lax, and palpation therefore extremely easy. I borrowed from a neighbour a syringe and proceeded to give the child a copious enema of soap and water; this seemed to give relief and a good deal of blood-clot and mucus was washed out. The intussusception receded several inches after injection, but being unable to reduce it altogether and having no suitable instruments with me I sent for my father, who arrived in about an hour, bringing with him a metal syringe, &c. We then gave the child a large injection of olive oil. Having supported the buttocks on pillows one manipulated the abdomen while the other used the syringe. After all the oil had been expended we continued to inject air, and after about ten minutes, having my hand on the abdomen, I detected some gurgling in the hypogastrium; the injection was continued for some time longer with intermissions to prevent the intestines becoming too much distended with air, and the pump was then removed. On examination all trace of the tumour had disappeared and nothing could be felt per anum. The child was somewhat restless after the operation, and a sedative mixture of bromide and hyoscyamus was administered. No more blood was passed by the rectum and the child seemed relieved of all pain. With the exception of a severe attack of vomiting on the following night the patient presented no further serious symptoms and recovery was complete. It is now a week since the injection was used, the child has free use of the bowels, takes the breast very well, and, with the exception of some patches of thrush on the tongue and fauces, is in very good health.

Great Torrington.

AN UNCOMMON MIDWIFERY CASE.

BY JOHN JARVIS, L.R.C.P. LOND., M.R.C.S. ENG.

THE patient was twenty-five years of age and was the mother of one living child a year old, at whose birth the use of forceps was necessary, and the perineum having been ruptured was sutured but failed to unite. I was called to see her for the second time on Oct. 6th. On arriving I found at the vaginal orifice a dark, livid tumour projecting three inches and having the size and shape of an extra large fist. In the middle of this was the os uteri; the pains were strong, and every succeeding one pushed out the tumour, dragging down the recto-vaginal septum. The membranes were unruptured and the head was presenting in the first position. Forceps not being available, turning was decided on, and under chloroform this was easily done, the os uteri rapidly dilating under the pressure of the hand. Prior to this the tumour had been returned inside the vagina. Delivery was effected by traction on the foot, whilst the os and cervix were pressed back by the other hand. There was no difficulty with the head. A dose of ergot was given, and the placenta came away easily, being followed by complete contraction of the uterus. Abdominal examination showed that the uterus was in its normal position. An interesting feature in this case is that the father and mother are both deaf and dumb, although the first-born child is not. The second cried lustily on birth.

Bath.

THE AGE-LIMIT FOR CATARACT EXTRACTION.

BY CHARLES BELL TAYLOR, M.D., F.R.C.S. EDIN.,
SURGEON TO THE NOTTINGHAM AND MIDLAND EYE INFIRMARY.

IS there an age beyond which it is not permissible to operate for cataract? I should say not; all things being equal, if a patient is in moderate condition, even though bedridden or mentally afflicted, there is no reason why he should not be operated on at any age. I have in the course of my very considerable experience operated upon a great number of persons over eighty years of age, two over ninety years of age, and a short time ago I extracted the lens from the left eye of a patient in his ninety-sixth year. These latter have all done well and the last patient has already good sight. I prefer to operate without iridectomy, so that after a time there is no trace (as I have frequently demonstrated before learned societies) of operative interference. Such eyes, according to my experience, bear the wear and tear of life much better than eyes operated on by the combined method, and of course sight is better. Otto Becker's researches have shown that where iridectomy is performed there is always prolapse at the angles of the wound and the lens capsule is apt to be trapped, an accident which never happens with simple extraction. The central and movable pupil, too, fulfils its natural function of excluding rays of light much better than one that has been deprived of a portion of its sphincter, and, as in aphakial animals, compensates for the absence of the lens.

Nottingham.

THE TREATMENT OF ACUTE TRAUMATIC SEROUS SYNOVITIS BY ELASTIC PRESSURE.

BY J. H. MARSH, M.R.C.S. ENG., L.R.C.P. LOND.,
SENIOR HOUSE SURGEON, MACCLESFIELD INFIRMARY.

THE value of elastic pressure in the treatment of acute traumatic serous synovitis is worthy of more consideration than at present it receives. Many of the surgical textbooks recommend cold applications and the immobilisation of the injured joint till the acute stage is over, the treatment by elastic pressure receiving but scanty notice, if, indeed, it is mentioned at all. Having during the last twelve months treated a considerable number of cases of acute synovitis following injury I have come to the conclusion that the method of treatment by elastic pressure gives, in a large majority of cases, the best results, affording a more immediate relief of pain and a speedier cure. By elastic pressure the absorbent powers of the synovial membrane are stimulated and thus the distension of the joint capsule, which is the chief cause of the pain, is rapidly relieved. By checking mobility and affording a firm, uniform, and even support to the injured tissues, it relieves the reflex spasm of the muscles acting on the joint. And, again, by supporting the bloodvessels further effusion into the joint is prevented. The pressure should be perfectly uniform, gentle, and elastic. All the hollows around the joint should be carefully packed with absorbent or wood wool, or, better still,

sheep's wool, which retains its elasticity under pressure. Then several layers should be placed around, the whole extending for some distance above and below the joint, and over all a moderately tight bandage of elastic webbing. There is no need for a splint. The limb may be swung in a Salter's cradle or tied up in a cushion. The dressing should be taken down at the end of twenty-four hours, the joint passively moved, and the pressure readjusted. In cases of acute synovitis of the knee-joint following a primary dislocation of a semilunar cartilage it seems desirable to keep the joint fixed for four or five days in order that, if possible, the displaced cartilage may become fixed. The results obtained by this method of treatment have been exceedingly satisfactory. The painful tension and reflex muscular spasm quickly disappear and the effusion undergoes speedy absorption.

Macclesfield.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

GREAT NORTHERN CENTRAL HOSPITAL.

A CASE OF LATERAL SINUS PYÆMIA FOLLOWING CHRONIC SUPPURATIVE OTITIS MEDIA; TREPHINING; RECOVERY.

(Under the care of Mr. W. R. H. STEWART.)

A BOY aged eleven years was on Feb. 26th admitted to the hospital, under the care of Mr. Stewart with the following history. He had had scarlet fever when he was four years of age, and there had since been a discharge from both ears. Five days before his admission he complained of earache; he was shivering and he seemed to be ill. On the following day he vomited, and two days later the discharge suddenly stopped. He was delirious off and on and did not sleep. On admission he complained of great pain in the head and he looked very ill; the temperature was 97° F. and the pulse was 120 and regular. There was a good deal of swelling and tenderness behind the ear, together with slight swelling of the right disc with full veins. The antrum was opened and a good deal of pus escaped from the cavity and from around the tip of the process. On the next day he was better; the swelling had subsided, the temperature was normal, and the pulse was 100 and regular. Some very offensive pus was removed from the antrum. On the following day he became restless and had a good deal of pain; the wound looked foul and sloughy and the optic neuritis had increased. Mr. Stewart, therefore, having first thoroughly cleansed the wound, trephined over the lateral sulcus and antral wound. The sinus was tapped and a firm healthy clot was found. The bone was then cut away with forceps in an upward and backward direction. The membranes bulged into the opening and no pulsation could be felt. On incising the membrane a large amount of serous fluid escaped. A director was then thrust into the temporo-sphenoidal lobe in every direction, but no pus was found. The wound was dressed with blue gauze. The same evening the patient had a rigor, the temperature rising to 104·4°, but he passed a good night and on the next day Mr. Stewart found him sitting up in bed eating his food and much improved in every way. That evening he had another rigor and the temperature reached 104·2°. As it continued to rise to 104° every day and the optic neuritis was persistent Mr. Stewart re-explored the temporo-sphenoidal wound and examined the cerebellum, but he could find no pus. He also slit up the lateral sinus and thoroughly scraped out the clot (which was perfectly sweet) and plugged the wound with antiseptic wax. The wound healed remarkably well, but for quite a month afterwards, although it remained healed and the boy seemed in other respects quite well, taking his food and sleeping well, he had a temperature of 104°, with an occasional rigor, nearly every day. On April 6th, notwithstanding the temperature, Mr. Stewart told the house surgeon to get the patient up and let him run about. From that time the temperature fell and never rose again. The boy has remained well ever since.

Remarks by Mr. STEWART.—I think the case is interesting from the somewhat unusual character of the symptoms. If now, if there is the slightest suspicion of there being any mischief beyond trouble in the antrum, open the latter and the lateral sinus at the same time by trephining over an area sufficiently large to include both. The temporo-sphenoidal lobe is then easily reached by chipping upwards with bone forceps. The cerebellum should, I think, have a separate trephine hole. This is a modification of Dean's operation.

SUSSEX COUNTY HOSPITAL.

TWO CASES OF GENERAL PERITONITIS FOLLOWING GANGRENOUS APPENDICITIS; LAPAROTOMY; REMOVAL OF APPENDIX.

(Under the care of Mr. WILLOUGHBY FURNER.)

WE are pleased to give these cases publication in the columns of THE LANCET, for examples of recovery from acute suppurative general peritonitis are not very frequent. We must undoubtedly ascribe recovery in one and temporary recovery in the other to the prompt and thorough intervention of the surgeon. In both cases the nature of the disease and its extreme gravity were recognised, more especially in Case 1, where we read the patient was immediately sent to the hospital after he was examined and no palliative treatment attempted. The symptoms in the second case were less acute and justified a judicious medical treatment before operation. At the operation on each patient adhesions were found in the region of the appendix, making it probable that the generalised inflammation was the result of bursting of an abscess into the general peritoneal cavity, and that they were not of the kind known as "fulminative." In both cases the cleansing of the peritoneum was very thoroughly carried out and the appendix vermiformis removed. For the notes of Case 1 we are indebted to Mr. A. H. Buck, house surgeon, and for those of Case 2 to Mr. East Apthorp of Burgess-hill.

CASE 1.—A man aged twenty-seven years was admitted to the Sussex County Hospital on May 16th, 1895, complaining of severe pain in the abdomen. On the evening before admission the patient, after some slight abdominal discomfort while at work during the day, was seized suddenly with severe general abdominal pain and vomiting. He was subsequently seen by Mr. H. H. Taylor and sent immediately to the hospital. On admission he was somewhat collapsed and writhing about in bed with pain. The tongue was dry and brown. The pulse was small and wiry, numbering 93; the respiration was 27, the chest alone moving; and the temperature was 100·6° F. The bowels were open once during the night, but since then there had been no passage of flatus. Vomiting commenced at 11 P.M. on the previous evening and had continued once or twice every hour since; the vomit was brownish in colour and slightly stercoraceous. The patient said that two years ago he suffered for several days from severe pain in the abdomen accompanied by sickness. The abdomen was hard, tympanitic, not moving with respiration, and very tender all over, especially in the right iliac fossa. Immediate operation having been decided upon, Mr. Furner made a median incision four inches long below the umbilicus. On opening the abdomen blood-stained fluid with flakes of puriform lymph escaped. On passing the hand to the right iliac fossa a mass of matted intestines was felt. The incision was then enlarged upwards until finally it extended from one inch above the pubes to one inch below the ensiform cartilage. With the space thus afforded the appendix was seen lying adherent between adjacent coils of intestine. There were two gangrenous openings on its free anterior surface, but no calculus was found. The adhesions were separated, the appendix freed, and a circular ligature having been applied to its base it was removed. The intestines, which were now chiefly outside the abdomen, were thoroughly cleansed with boiled water and weak boracic solution, as were also the abdominal and pelvic cavities, and all adhesions were separated. The wound was then closed, and a glass drainage tube carrying a strip of cyanide gauze was left in the lower end. Twice during the next twenty-four hours the fluid in the tube (amounting to

about four drachms of slightly brown serum each time) was removed, and at the end of that time, as the tube was being freely moved about by the peristaltic action of the intestines, it was removed. On May 17th the temperature was 100·2° and the pulse was 109. The abdomen was slightly distended but moving gently with respiration. There had been no sickness, but no passage of flatus. A turpentine enema was followed by the passage of a little flatus. The patient was fed by nutrient enemata. On the 18th the temperature was 98·8° and the pulse was 96. The abdomen was rather more distended; three turpentine enemata had been administered during the previous twenty-four hours, the last being followed by free passage of flatus and some fæcal matter. He was now taking by the mouth small quantities of barley water and milk. After this the patient made an uninterrupted recovery, the temperature only once rising to above 99°. He got up for the first time on June 16th and left the hospital perfectly well on July 10th wearing an abdominal belt. When seen seven months afterwards the cicatrix was quite sound, with no trace of hernia.

CASE 2.—A youth aged nineteen years first complained of pain about the umbilicus on March 29th last. On April 1st the pain increased, and he consulted Mr. East Apthorp of Burgess-hill, who ordered him to bed and prescribed a milk diet and a mixture containing opium and belladonna. The bowels had acted on the previous day. The pain in the abdomen rapidly increased, and at 3 A.M. the following morning, April 2nd, his medical attendant was called and found him complaining of intense pain and tenderness about the right lumbar region and umbilicus; the whole abdomen was very hard and slightly tympanitic; there had been no vomiting, but great nausea on taking food. The temperature was 100° F. Half a grain of morphia was ordered subcutaneously during the day; the abdomen was still very painful, the patient vomited twice, and the temperature was 100°. An enema of two pints of soap-and-water brought away a few scybala. On the 3rd the abdomen was more distended and was very tympanitic, there being great tenderness all over and no vomiting occurred. A rectal enema brought away nothing; no flatus had passed per rectum. A morphia injection was given at night. On the 4th all the symptoms were worse, the abdomen being very hard and tympanitic, with intense pain. He vomited three times during the day, but the vomit was not fæcal in character. On the 5th Mr. Furner was telegraphed for, and at 11 A.M. the patient was put under ether. The walls of the abdomen were cleansed and washed with a 1 in 20 carbolic lotion; an incision was made in the middle line, which was subsequently enlarged and extended nearly from the ensiform cartilage to the pubes. The omentum was adherent by recent lymph to the intestines, the peritoneum covering which was intensely infected and coated here and there with flakes of purulent lymph. On drawing some of the small intestines out of the abdomen the appendix, which was twisted on itself, was seen to be adherent to the colon and adjacent small intestine, a gangrenous opening the size of a pea was seen on its front surface, and it contained a small fæcal calculus in its interior, just above the perforation. A ligature was applied to the base and the appendix was removed. On further separating the adherent intestines two large collections of strongly fæcal-smelling pus were evacuated which had tracked up to the right hypochondriac region, one on each side of the ascending colon, between it and the contiguous coils of small intestine, which, with the colon, were thickly coated with purulent lymph; in one portion not coated with lymph the colour of the intestine was of a dark mahogany hue, like that of the intestine in a tightly strangulated hernia. It was not possible to remove any of this adherent lymph, but the intestines were cleansed as far as possible by pouring over them several jugfuls of hot boiled water. The pelvic and hypochondriac regions were thoroughly flooded by pouring the boiled water into them through an ordinary glass medicine funnel. In this way a second small fæcal calculus was washed out of the pelvis. The distension of the intestines was so great that it was necessary to incise the small intestine to evacuate the contained gas. This wound was closed by Lembert's suture and the abdominal wound was closed by a crossed Fowler's suture. No drainage tube or gauze was left in the wound. At the close of the operation, which lasted two and a half hours, the patient was much collapsed; on regaining consciousness he vomited a quantity of dark so-called grumous matter. Feeding per rectum was ordered and also occasional turpentine enemas. Nothing was to be given by the mouth except a little warm water in teaspoonful doses if thirst was troublesome. On the 6th, twelve hours after the operation, the patient complained of very little pain; no sickness had occurred and flatus had passed per rectum. The pulse was 90 and of good volume, and the temperature was 101°. On the 7th the patient was very comfortable. He had not vomited. The temperature was 99·5°. A teaspoonful of milk-and-water was given every hour by the mouth. From this date the improvement was steady and uninterrupted. On the 11th the stitches were removed; the wound had entirely healed with the exception of two small stitch abscesses, which gave a strong fæcal odour, but soon healed. Twenty-two days after the operation the patient went out in a bath-chair and in July was in all respects perfectly well.

The patient felt well till Oct. 4th. He had played football two days before this date. He had a meal of apples and cheese for supper on the following day. On Oct. 4th he woke up in the morning with pain across the upper part of the abdomen; he retched, but he was not sick. The pain continued and gradually became localised to the left iliac fossa, where it had been for the previous twenty-four hours. He had felt, but had not been, sick. The bowels had acted after an enema on the day before his re-admission to hospital, but he had passed no flatus since. On Oct. 7th, in the evening, the scar of the old wound in the middle line was seen to be sound. The abdomen was distended and somewhat tympanitic; it moved well on respiration. Tenderness and resistance were experienced in the left iliac fossa. His aspect was somewhat anxious. The pulse was not wiry and numbered 100; the temperature was 100·6°. Hot applications were applied to the abdomen, and a soap enema which was given was returned without result. On the 8th the temperature was normal and he looked better. The abdomen was slightly distended. He said that he had not passed flatus. One ounce of oleum ricini was given, and later a turpentine enema was followed by the passage of a little flatus. On the 9th the temperature was 98·4°. The oil had not acted and he was given a second dose. A turpentine enema was administered and was followed by apparently a copious normal motion and flatus. In the evening the patient was much worse. The abdomen was more tender, the pulse was 120, the temperature was subnormal, and vomiting took place five times during the day. The abdomen was therefore opened under ether. After five minutes the patient stopped breathing and the pulse was scarcely perceptible. He was infused with saline fluid and rapidly improved. The intestines were found to be universally matted together by old adhesions, and a loop of small gut about six inches long was constricted by a band which was divided. The recovery of this portion of gut being very doubtful a Paul's tube was inserted and the intestine sutured to the edges of the wound. The patient died six hours after the operation from shock.

Necropsy.—The intestines were found to be generally adherent, the adhesions being old and firmer and more numerous in the right than in the left half of the abdomen. There was no trace to be found of the remains of the appendix or of the ligature.

Remarks by Mr. FURNER.—These two cases are fair examples of the two forms of appendicitis which lead to general peritonitis. In Case 1 there was gangrenous appendicitis without abscess, and in Case 2 the abscess formation round a diseased appendix leaked into the general peritoneal cavity. In Case 1 laparotomy was performed about twenty-four hours after the commencement of serious symptoms and in Case 2 about eighty hours afterwards so far as can be estimated. The length of the median incision adopted in each case, which extended almost from the ensiform cartilage to the pubes, though necessary in order to remove the appendix, afforded facilities for a more thorough cleansing of the intestines and abdominal and pelvic cavities than could have been obtained by any other single incision. The favourable termination of Case 1 was largely due to the attentive care in the after-treatment of Dr. G. B. Kempe, the then acting house surgeon to the hospital, and the temporary recovery of Case 2 in an equal degree to Mr. East Apthorp, and also in this case to the able administration of ether by Mr. F. Apthorp during the prolonged operation. When considering the symptoms preceding the fatal termination of Case 2 just six months after the first operation, due to a common consequence of general peritonitis—viz., bands and adhesions—it may be pointed out as worthy of observation: (1) that the daily employment of means to elicit action of

the bowels—e.g., turpentine enema, &c.—failed to prevent the formation of strong and universal adhesions about the small and large intestine: and (2) that the severity of the symptoms generally observed in cases of intestinal strangulation due to bands was modified by the altered condition of the peritoneum and bowel—pain and abdominal distension were slight and faecal vomiting was delayed.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Specimen of Hydrosalpinx.—Undescended Testis.—Rodent Ulcer of the Forearm.—Chondro-sarcoma of the Submaxillary Glands.—Tubercle of the Thyroid Gland bursting into the Œsophagus.—Multiple Bronchiolectasis.—Use of Formalin in the Preparation of Museum Specimens.—Exhibition of Specimens.

A MEETING of this society was held on Nov. 3rd, Mr. H. T. BUTLIN, President, being in the chair.

Mr. LOCKWOOD showed specimens of Hydrosalpinx and of a Tubo-ovarian Cyst. They had been removed from a patient by operation. The mode of production of the tubo-ovarian cyst was shown. One tube was but slightly dilated and part of its mucous membrane was intact and but little diseased. The tube itself was beginning to assume the retort form, with a commencing constriction betwixt the dilation and the tube. The ovary lay apart from the tube and was not adherent to it, a constriction separating one from the other. Had the tube dilated further the ovary would be adherent to the tube. On the other side this had evidently occurred. The tube had become a large retort, with a sharp constriction betwixt the dilatation and the stalk. The ovary was fastened to the end of the dilated part and contained several small cysts. Although both specimens showed abundant evidences of inflammation and had been very adherent at the operation, nevertheless it was evident that inflammation had not caused the adhesion of the ovary to the dilated tube. This had been due to the expansion of the broad ligament by the dilatation of the Fallopian tube. The hydrosalpinx had probably been caused by an inflammatory attack which was known to have occurred several years before.—Mr. HUTCHINSON said that a specimen had recently been added to the museum of the London Hospital which showed the condition known as hydrocele of the pouch.—Mr. J. H. TARGETT said that in the cases of so-called ovarian hydrocele which he had examined muscle fibre was to be seen in the walls, proving that these cysts were the dilated ends of the Fallopian tubes.

Mr. LOCKWOOD also showed the Testis of an adult which had been removed from the inguinal canal during an operation for the radical cure of hernia. The gland easily slipped back into the abdomen, but never into the scrotum. Neither the body of the testis nor the epididymis showed any trace of spermatozoon. The seminal tubules were separated by much connective tissue. Their basement membrane was very thick and the centre of the tube contained a few irregularly arranged nuclei. Obviously the gland was not of true functional value. Probably this is usual in such cases and had been so in other specimens examined. The point was of importance, and most specimens ought to be examined.—Mr. W. G. SPENCER said that he had been able to examine the testes in four such cases. The epididymis was found to consist of only a few tubes, and these were not connected with the testes. The non-descent of the testicle was due to the arrest of development. The same dangers arising from undeveloped testes occurred in animals as well as in man—viz., the liability to inflammation and new growth.—Mr. A. E. BARKER quoted the case of a man well developed in every respect except that the testes were rudimentary. The functional activity of these was evident, as he was the father of a family. He mentioned a second case of a similar nature and doubted whether it was right to accept the view that such atrophied testes cannot be functional.—Mr. BUTLIN mentioned other cases in which retained testes were proved to be functional.

Mr. J. HUTCHINSON, jun., showed a specimen of Rodent Ulcer of the Forearm, and alluded to the fact that amongst the large number of cases of true rodent ulcer referred to and exhibited at the society in 1895 not one had been obtained from the limbs; indeed, some doubted the possibility of its occurrence in such a position. The growth was situated on the outer aspect of the forearm of a woman aged forty-five years; it measured about an inch in long diameter and had existed for over a year. From its clinical features, and especially from its rolled edge, Dr. Stephen Mackenzie had diagnosed it as rodent ulcer before the case was transferred for excision. Vertical sections showed reticular downgrowths of cells from the rete mucosum, having the typical structure of rodent ulcer as met with on the face. Cell-nests were practically absent and the corneous layer took no part in the down-growth. There was considerable infiltration of the corium beneath the ulcer; but the adjacent skin glands, both sweat and sebaceous, were unaffected. The case pointed to the origin of the growth from the rete Malpighii and not from the appendages (hair follicles, glands, &c.), and threw doubt on the suggested relation in the face to rudimentary epithelial down-growths. Mr. Hutchinson, jun., alluded also to a case of typical rodent ulcer in the groin which he had seen, and expressed an opinion that its occurrence on other parts of the body than the head and neck was not so rare as was generally supposed.—Dr. A. A. KANTHACK said that in deciding the position from which a rodent ulcer started it was necessary that the growth should be examined before any ulceration of the surface had taken place. In the specimen shown ulceration had already taken place, and it was therefore of no value from that point of view. When the growth is examined early enough the rete mucosum is always found normal, the sweat glands are unaffected, but the sebaceous follicles disappear.—Mr. A. A. BOWLBY said the growth was undoubtedly rodent ulcer. He agreed with the former speaker in the view that the growth started below the cutis and epidermis and only had the appearance of extending down when the growth was ulcerated. He thought the growth might originate in the hair follicles, but there was a good deal of evidence pointing to the sebaceous glands.—Mr. W. G. SPENCER thought that a slow-growing epithelioma presented much the same characters as a rodent ulcer. He did not believe in the marked distinction between epithelioma and rodent ulcer.—Mr. JAMES BERRY said he had examined many cases of rodent ulcer and in all of them the growth had begun below the rete mucosum. He had seen one case where the growth occurred in the groin.—Mr. H. T. BUTLIN said that one distinctive feature of a rodent ulcer was the scaring over the surface which took place, the structure of the rodent ulcer being demonstrable below the new skin; this never occurred in epithelioma.—Mr. SHATTOCK said that the finding of cell nests definitely proved that a growth was not a rodent ulcer. He thought the growth might arise from the rete mucosum or a hair follicle, or from the remains of embryonic structure, abortive glands in connexion with hair follicles.—Mr. J. HUTCHINSON, jun., in reply, said that so far as his case went it pointed to the origin of the growth being in the rete mucosum.

Mr. J. HUTCHINSON, jun., also showed a series of sections of Adeno-chondroma of the Left Sub-maxillary Gland in a young man who, nearly two years later, was free from any recurrence. The innocent nature of these tumours has been proved in a considerable number of cases. The cartilage occurs in the form of both hyaline and fibro-cartilage, and, unlike that in the similar tumours of the testicle, ramifies in an intricate manner throughout the whole growth. Mixed with this are glandular acini, often rudimentary or atrophied from compression, and occasionally small cysts. Similar cases have been recorded by Butlin, Nepveu, Malherbe, and others, and their occurrence in the parotid and lachrymal glands has been shown. Mr. Hutchinson, jun., discussed their relationship to calcifying adenomata of the skin, and the theory advanced by Malherbe that the whole group should be included under the term of "polymorphous epithelioma." He expressed an opinion that at present it would be best still to call them chondro-adenomata, which both defined their structure and implied their non-malignant nature.

Dr. ROLLESTON showed a specimen of Extensive Tuberculous Disease of the Thyroid Gland. There were caseous areas through the gland which were of the normal size. In

the left lobe the caseous material had softened down and formed an abscess which had discharged into the upper part of the œsophagus on the left side. The lymphatic glands around the innominate artery were caseous and had softened down and the resulting abscess had tracked up into the neck and opened into the œsophagus by several sinuses, the highest and largest being nearly opposite that of the tuberculous abscess in the left lobe of the thyroid body. Half an inch below these roughly symmetrical openings the œsophagus showed slight cicatricial contraction. The patient was a woman aged twenty-three years who died in St. George's Hospital with painful paraplegia due to caries of the spine in two distinct places, the first lumbar vertebra and the first piece of the sacrum being extensively diseased. There was extensive tuberculous disease of the upper lobes of both lungs. Miliary tubercles in generalised tuberculosis were not rare in the thyroid gland, but larger masses of caseous tubercle were very uncommon. It had been thought that the secretion of the thyroid gland was antagonistic to the development of tubercle and that tubercle was for this reason rare in exophthalmic goitre, while it was not infrequent in myxœdema. The association of primary tuberculous disease of the spine and secondary disease of the thyroid gland was perhaps accidental, but in the light of the frequent occurrence of secondary growths in bone in cases of primary malignant disease of the thyroid gland it was interesting, and suggested the desirability of more extended and minute examination of the gland in cases of tuberculous osteitis.—Mr. JAMES BERRY commented on the rarity of tubercles in the thyroid gland and the extreme rarity of large tuberculous abscesses. He stated that no specimen existed in the museum of any London hospital. Abscess in the thyroid gland, except as the result of operation, occurred only in connexion with specific fevers, typhoid fever, and pyæmia. Such abscesses nearly always burst either into the œsophagus, pharynx, or mediastinum, and therefore should be opened as soon as discovered.

Dr. H. H. TOOTH described under the name of Multiple Bronchiolectasis the appearance of the lung of a boy aged eighteen months. The lung was found to be riddled with small cavities from one-sixteenth of an inch to a quarter of an inch in diameter. They were smooth-walled and contained only air. No direct connexion with bronchi was made out. There were found microscopically evidences of broncho-pneumonia and peri-bronchitis. Moreover, the cavities above noted were surrounded each by a wall of inflammatory cells, which formed the lining wall of the cavity generally, but here and there was found evidence of an elastic lamina. The alveoli of the intervening lung tissue were, generally speaking natural. It is probable that these little cavities are dilated bronchioles, the dilatation being a sequence of the peribronchial inflammatory processes.—Dr. NORMAN MOORE said that similar cavities were seen in children dying from whooping-cough, but were not so uniform in their distribution as in Dr. Tooth's case, being limited as a rule to the lower lobes.—Mr. SHATTOCK said that a similar condition had been described by Dr. Sharkey under the title Acute Bronchiectasis, and was due to an acute inflammatory peri-bronchitis.—Dr. A. F. VOELCKER said he thought there were two varieties, a tuberculous and a non-tuberculous; both varieties showed marked peri-bronchitis.

Dr. A. A. KANTHACK and Mr. E. H. SHAW read a paper on the Use of Formalin in the Preservation of Museum Specimens. They referred to the excellent results which had been obtained in preserving eyes. Two methods were described: (1) Jores' method, in which the specimens are placed at first into a solution of formalin, then for a short time in spirit, and finally mounted in equal parts of glycerine and water; and (2) Kaiserling's method, in which a stronger solution of formalin is used, and more satisfactory results were obtained with this method than with the former. Two tables were given showing the number of hours necessary for preparing various tissues under the two methods. Dr. Kanthack showed some specimens prepared in the above manner which had preserved their original colour most excellently. Among the specimens shown was a Broncho-pneumonic Lung and a Granular Kidney, both of which had all the appearances of fresh specimens.

Dr. ROLLESTON showed specimens of Secondary Polypoid Sarcomatous (Melanotic) Tumours in the Mucosa of the Small Intestine—some growths start in the submucosa and others in the mucosa; some of the growths are melanotic and others are unpigmented—from a man aged thirty-seven years in whom a sarcoma was removed from the right eye two years before death.

Dr. A. A. KANTHACK showed specimens of Fibrin Network in Broncho-pneumonia and Lobar Pneumonia.

HUNTERIAN SOCIETY.

Elephantiasis.—Lymphadenoma.—Hypertrophy of the Right Breast.—Renal Calculus in the Left Kidney.—Fibrosis of the Right Lung.—Compound Comminuted Fracture.

AN ordinary meeting of this society was held at the London Institution on Oct. 28th, Dr. HERMAN, the President, being in the chair.

Dr. HINGSTON FOX showed a case of Elephantiasis in a patient aged sixty-two years who had not been out of England. He quoted Dr. Manson's opinion to the effect that the latter had known the disease occur in people who had not been abroad. The disease affected the penis and scrotum and the left leg and left groin. Dr. Fox thought that the case was erysipelas of the calf of the leg, resulting in blocking of the lymphatics and extension of the lymphatic thrombosis.—Mr. OPENSHAW thought that the value of this case lay in the fact that it showed that all these cases were not due to filariæ.—Dr. BERTRAND DAWSON, while agreeing with Dr. Fox that it was due to erysipelas, yet thought an explanation of the case might be found in the presence of immature ova, inasmuch as in such cases erysipelatoid attacks were not infrequent.—Dr. GLOVER LYON advanced the opinion that the symptoms might be explained by venous thrombosis in the absence of filariæ.—In reply Dr. FOX was inclined to agree with Dr. Bertrand Dawson as to the presence of immature filariæ and he could not accept Dr. Glover Lyon's explanation.

Dr. HINGSTON FOX also showed a case of Lymphadenoma. He brought this case before the society because of the curious connexion between this disease and rheumatism. Dr. ARTHUR DAVIES alluded to a case of lymphadenoma which had been treated with some success by red marrow.—Dr. F. J. SMITH thought the case was probably one of lympho-sarcoma, not lymphadenoma, and asked if the blood had been examined.—Dr. GLOVER LYON alluded to a similar case in which the glands had decreased after an acute febrile attack.—Dr. HINGSTON FOX replied.

Dr. ARTHUR DAVIES brought before the society a case of Hypertrophy of the Right Breast.—Mr. OPENSHAW wished to know if the enlargement of the breast commenced at puberty and if there were any pain in it.—Dr. F. J. SMITH doubted the existence of true hypertrophy in this case and was of opinion that the enlargement was due partly to periosteal thickening and fat.—Mr. TARGETT spoke of six cases in males which had come under his notice after removal for pain. He alluded to the ill-development of acini and the presence of large amounts of fat and fibrous tissue.—Dr. HINGSTON FOX agreed with Dr. Davies as to the nature of the case.—Dr. DAVIES, in reply, stated that there had been no pain and that the mother had noticed it first when the patient was eight years old.

Dr. ARTHUR DAVIES also communicated notes of a case of Renal Calculus in the Left Kidney in a man aged twenty-three years. On admission pus was present in the urine. An operation was performed by Mr. Stephen Paget, who removed an oxalate of lime calculus weighing forty-nine grains from the renal pelvis.—Dr. GLOVER LYON thought that the x rays would have revealed the presence of the stone.—Mr. OPENSHAW and Mr. TUBBY made remarks on the distribution of pain and its absence in the testis and down the thigh.

Dr. BERTRAND DAWSON showed a patient with Fibrosis of the Right Lung, with Creaking, Displacement of the Heart, and Increased Tactile Vocal Fremitus. This patient had been treated for phthisis for some years, but Dr. Dawson believed the condition to be fibrosis and bronchiectasis.

Mr. OPENSHAW introduced a patient with Compound Comminuted Fracture of the Lower End of the Left Humerus, in which at the site of fracture there was excessive movement, yet the patient was able despite this to carry on his daily occupation of ticket collector.—Mr. OPENSHAW also showed a case of Hypertrophy of the Alveolar Processes of the Upper and Lower Jaw, which he believed to be idiopathic.—Dr. HINGSTON FOX drew attention to the patient's age, which was twenty-five years. He wondered if the

alveolar processes had continued to grow while the remainder of bony growth had ceased.—Mr OPENSHAW also showed a case of Infantile Hemiplegia with Talipes Equino-varus on the Left Side and Contraction of the Left Forearm and Hand. In this case there existed a deep depression of the right parietal bone which had existed at birth.

ÆSCULAPIAN SOCIETY OF LONDON.

Puerperal Sapræmia.—Primary Cancer of the Right Lung.

A MEETING of this society was held on Oct. 23rd, Mr. STEPHEN PAGET, President, being in the chair.

Dr. F. G. STEVENS read a paper on Puerperal Sapræmia. He defined this disease as due to putrefactive bacilli acting locally, at the seat of retained membrane, clot, or placental fragment, on the endometrium, and though themselves shut out by a deeper layer of defensive leucocytes, infecting the blood with their toxins. At a later stage they were capable of acquiring greater virulence in contact with the necrotic surface of the endometrium and traversing the deeper uterine tissues and the body generally, thus producing a true septic process. Sapræmia, Dr. Stevens observed, is compatible with a fairly copious lochial discharge, usually fœtid, but sometimes not so owing to some deodorant action of the vaginal secretions. Local treatment—its most efficient remedy—should anticipate the stage of general infection. He would not rely on douching only, but would first examine with the finger, using an anæsthetic, and remove any offending material. He condemned the use of all forceps and curettes as causing injury to the endometrium and so opening up fresh foci for contagion. He objected to double-action catheters as inefficient and preferred to inject slowly a small quantity of a 1 in 1000 corrosive sublimate solution, afterwards washing this well out with boiled water at 120° F. Personal cleanliness as regards patient, nurse, and practitioner was insisted on, the coat in the case of the last being removed, the arms bared, and the hands and arms well washed and scrubbed in hot water and soap and afterwards in an antiseptic solution (preferably a 1 in 1000 corrosive sublimate solution).—Dr. W. J. GOW regarded sapræmia as purely putrefactive and unconnected with true septic endometritis. He preferred to leave local treatment to the natural *vis medicatrix*, using neither curette nor douche. Putrefaction, he considered, did not really begin in pieces of retained placenta, but in retained clots. He differed from Dr. Stevens in regarding perineal wounds as seats of sapræmia.—Mr. G. STEVENS believed that sapræmia was very apt to originate at seats of injury near the os, pelvic abscess especially being referable to lesions in the pelvic zone of the uterus. Mischief due to perineal tears he had seen to come on commonly about the end of a week. Drugs had been too little esteemed; he referred especially to the value of ergot.—Mr. SPENCER attributed an experience of the last nine years without a death to his free use of antiseptics. He regarded sapræmia as due in many cases to the too rapid expression of the placenta, to failure in cases of retention to insert the hand (aseptic) and remove adherent remnants, or to obtain firm contraction of the uterus. He avoided the subsequent use of curettes entirely and used the douche, if anything, to cleanse the uterine interior.—Dr. OSTLERE, while fully admitting the importance of cleanliness, considered that the use of antiseptics was overdone. His own record showed two to three deaths in 1000 cases attended.—Mr. WORLEY and Dr. J. W. HUNT also spoke, the latter insisting on the need of greater care and cleanliness among nurses.

Mr. W. C. M'DONNELL read notes of a case of Primary Cancer of the Right Lung. Last January the patient complained of pain in the right shoulder. Signs of consolidation with diminution of breath sounds followed. In March glandular enlargement was noticed in the right axilla and anterior triangle. The patient died in April. Microscopic sections were shown.

NORTH-WEST LONDON CLINICAL SOCIETY.

Exhibition of Cases.

A MEETING of this society was held on Oct. 21st, the President, Sir JOHN WILLIAMS, Bart., being in the chair.

Dr. KNOWSLEY SIBLEY showed a woman aged twenty-six years who had suffered from Chronic Rheumatism for two and a half years and who had improved under treatment by hot-air baths.

Mr. W. H. BATTLE showed a boy who had sustained a Fracture of the Ulna and a Forward Dislocation of the Head of the Radius of the Right Arm. A good result had been obtained by excising the head of the radius.

Mr. JACKSON CLARKE showed a man aged fifty-two years from whom he had removed the upper half of the rectum for cancer by Kraske's method. The operation was performed nine months previously, and the patient appeared to be in perfect health. He had been working full time as a carpenter for the past three months, and there was no sign of recurrence.

Dr. SIBLEY showed a young woman the subject of Ménière's Disease. Two years ago she began to suffer from noises in the head. Attacks of vertigo, in which the patient fell down, followed. There was almost complete deafness in the right ear.

Mr. JACKSON CLARKE showed a girl aged fourteen years who had a painful Swelling in the Middle of the Right Tibia; it was first noticed after an attack of typhoid fever twelve months ago.

Dr. SIBLEY showed a young woman the subject of severe Persistent Headache.

Mr. LEWIS showed cases of Rodent Ulcer and Tertiary Syphilis.

Mr. JACKSON CLARKE showed a man aged fifty-three years who fell while carrying a sheet of glass under his arm, with the result that a large wound was caused in the axilla. The ulnar and median nerves were completely severed, also the axillary vein, the pectoralis latissimus, and teres major muscles. The nerves were sutured with sulphuro-chromic gut. Sensation began to return in the palmar area of the median nerve thirteen weeks after the operation. Mr. CLARKE also showed a typical case of Gouty Orchitis.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Tumours of the Orbit.

A MEETING of this society was held on Oct. 22nd, Mr. RECKLESS (the President) being in the chair.

Mr. DALE JAMES showed a case of Pityriasis Rubra (Hebra) in a man aged fifty-two years who had been under treatment for four months when he came to the Sheffield General Infirmary. At that time there was a bright erythematous blush on certain parts of the extremities. In spite of varied treatment the disease had advanced. Almost the whole area of the skin was now involved and the patient was steadily losing weight and energy.

Dr. SINCLAIR WHITE showed a Pure Meningocele of the Spinal Membranes in a boy aged ten years, which extended over the entire sacrum. The skin was natural excepting a patch below the apex, which was cicatricial. The tumour at birth was about the size of half a walnut. It had grown rapidly of late.

Mr. SNELL related a case of Herpes Ophthalmicus which came on a few days after cataract extraction but did not interfere with the result of the operation. It was a severe case, the forehead, nose, and upper eyelid being affected.

Mr. MAKEIG JONES showed a man suffering from Vaccinia contracted from a cow while milking. There were eight typical pocks on the right forearm. A day or two previously to the inoculation he had grazed the skin off the forearm.

Mr. RICHARD FAVELL showed a Suppurating Dermoid Cyst which he had removed from a young woman. The tumour had become intimately attached to the parietal peritoneum and had discharged externally midway between the umbilicus and anterior superior iliac spine.

Mr. PYE-SMITH showed a woman aged forty-four years the subject of Congenital Displacement of Both Hips. The lower limbs were in a condition of extreme rotation outwards. The gait was waddling, the hands reached the knees, and the stature was dwarfed, the patient being barely 3 ft. 4 in. in height. Several photographs exhibited well the extreme lordosis and other secondary deformities.

Dr. ARTHUR HALL showed a series of cases of Syphilis which had been traced to infection from a congenitally syphilitic baby. The mother of this child presented an old

syphilitic ulcer on the leg. The baby had ulcers round the mouth and buttocks. From this baby the brother had been infected, the primary sore being on the left cheek. He had condylomata now. From the baby, also, a little girl aged three years living in the next street was infected, the primary sore being on the lip. This was probably due to her sucking a "dummy titty." This child had secondary symptoms and had infected her mother, aged thirty-nine years, the primary sore being on the left nipple. This woman, previously quite healthy, had been in the habit of allowing her little daughter to suck at her nipple to send her to sleep.

Mr. SNELL read a paper on Certain Apparently Organic Tumours of the Orbit which disappear under medicinal treatment, and said there were certain tumours which exhibited features rendering differentiation difficult from those of a malignant nature. He referred to tumours occurring especially at the middle period of life, when malignant growths would be prone to arise. He referred to Panas's interesting paper at the London meeting of the British Medical Association, in which he urged that it was a mistake to regard syphilis as the only cause of these neoplasms. They might be lymphomas, sarcomas, syphilomas, &c. He related a series of instances in which growths, apparently organic, had become dispersed. He compared the cases of two women, in one of whom the growth dispersed under iodide of potash, whilst the other was a sarcoma and necessitated removal by operation. Careful inquiry appeared to exclude syphilis. The well-known difficulty of obtaining a specific history was acknowledged, and reference was made to the possibility of syphilis being acquired in an innocent manner. The simplest way to account for such cases as he had related was to assume, of course, that they were specific, but he thought that they need not necessarily be so, and Panas's observations as to unilateral and bilateral orbital growths afforded strong support to such a contention.

The PRESIDENT, Dr. PORTER, Dr. RHODES, Dr. ARTHUR HALL, Mr. DALE JAMES, Dr. ENGLISH, Dr. SAMSON MATHEWS, Mr. PYE-SMITH, Dr. ADDISON, and Mr. KNIGHT took part in the discussions arising out of the various communications.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Presidential Address.—Paraplegia associated with Abdominal Aneurysm.—Exhibition of Cases.

A MEETING of this society was held on Oct. 20th, Mr. GODFREY CARTER, President, being in the chair.

Mr. CARTER delivered the Presidential Address, in which, after thanking the society for the honour conferred upon him, he directed attention to some of the preventable causes of diseases which shorten life. The feeding of infants was discussed, especial attention being directed to the importance of sterilising the milk. If this be not done the milk is generally slightly acid in reaction and is teeming with bacteria when taken by the infant. Another danger to health was disease arising from sewer-air poisoning, and statistics were quoted to prove the terrible loss of life due to this cause. The importance of houses being examined by sanitary engineers was insisted upon. The duties of medical officers of health were described, and it was pointed out how important it was for these officers to devote the whole of their time to their public duties, for which they should receive adequate remuneration. The appointment of a Minister of Public Health was advocated, and it was urged that every house prior to its being occupied should be furnished with a certificate of health from a duly appointed official. The ravages of tuberculosis were alluded to, great danger to the public health being caused by careless expectoration, by the want of supervision over the slaughtering of cattle, and by means of milk taken from tuberculous cows. A great danger which a man of, say, forty years of age had to contend with was arterio-sclerosis; and two very important factors in the causation of this disease, amongst others, were the quality of the arterial tissue the individual had inherited and the amount of wear and tear to which it had been subjected. The dangers of excessive eating and drinking were indicated as frequently ending in renal inadequacy and arterio-sclerosis, with or without cerebral hæmorrhages later. "Worry" was looked upon as an important cause of arterio-sclerosis, often bringing on attacks of migraine, during which attacks the temporal arteries often appeared to be in a condition of transient tension. In conclusion, Mr. Carter congratulated the Bradford Medical Society on its prosperous financial basis and increased numerical strength and looked forward to a period of well-sustained prosperity in the future.—Dr. ARNOLD EVANS proposed, and Dr. CAMPBELL seconded, a vote of thanks to Mr. Carter for his address.

Dr. BELL showed patients illustrating: (1) Exophthalmos from Aneurysm of the Carotid Artery; and (2) Mastoid Necrosis with Optic Neuritis and Normal Vision.

Mr. CHAPMAN read notes of a case of Paraplegia associated with Abdominal Aneurysm which was recently in the infirmary under the care of Mr. Horrocks. A man aged fifty-eight years quickly became paraplegic after attempting to move a heavy plank of wood. There was retention of urine. No pulsation could be detected in either femoral artery. The lower limbs were blue and cold. Three days after admission he died. On post-mortem examination extensive atheroma of the abdominal aorta and of the iliac vessels was found. At the level of the cœliac axis was an aneurysm the size of a pigeon's egg. Both common iliac arteries were plugged by clot, which extended into the lower part of the abdominal aorta.

Reviews and Notices of Books.

Skiascopy and its Practical Application to the Study of Refraction. By EDWARD JACKSON, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic. Second edition, with twenty-seven Illustrations. Philadelphia: The Edwards and Docker Company. 1896. Pp. 108. Price $1.

IN our notice of Dr. St. John Roosa's treatise on the Diseases of the Eye we note the indisposition of this excellent ophthalmologist to rely on the shadow test. "It is," he says, "a method of very little importance when the ophthalmometer is properly employed and relied upon;" and again he says: "In low degrees of myopia, when it may be confounded with hyperopia, the shadow test may have a certain corroborative value," but no more. Dr. Jackson, on the other hand, in the little work before us, claims for it that it is an objective test which is quite independent of the patient's intelligence or of his coöperation, that it is extremely accurate and can be rapidly practised, and that it requires no costly apparatus for its application. These are not inconsiderable merits and they are well brought out in Dr. Jackson's work.

He admits that skiascopy, though a valuable method of examination, is one difficult to master, which becomes more and more evident as one continues to work with it. "The theoretical basis is perfectly simple, the fundamental phenomena readily observed, and with a few days' practice the merest tyro may be able by it to estimate the refraction in favourable eyes with an accuracy not to be attained by any other objective method. But long after the stage of such acquirement has been passed the surgeon will again and again encounter cases that still prove difficult and puzzling." It is not surprising, then, that some practitioners, like Dr. St. John Roosa, believing they have a satisfactory means of testing errors of refraction with ordinary lenses and the ophthalmometer, will have nothing to say to it, especially as it involves the instillation of atropine, which is not always either convenient or safe.

Perhaps the best advice that can be given is that in difficult cases both methods of examination should be carried out. The practitioner will find all that can be said of the mode of application of the shadow test in this work, and will, after some experience, be disposed to admit that, like other modes of investigation, it requires attention, care, and an intelligent appreciation of the appearances that present themselves.

A Handbook of Anatomy for Art Students. By ARTHUR THOMSON, M.A., Professor of Human Anatomy in the University of Oxford and Lecturer on Anatomy in the National Art Training School, South Kensington. Oxford: At the Clarendon Press. 16*s.*

THE name of Professor Arthur Thomson upon the title-page of this work is a guarantee for careful and painstaking workmanship and a study of its contents only confirms this opinion. Anatomy for artists is a branch of applied anatomy, and we think that a few lectures upon it might not unprofitably be added to the ordinary course of anatomical lectures for medical students. There is nothing new in this suggestion, for Sir Charles Bell used to show his class a muscular model and point out how much anatomy could be learned from surface views. Tell a student that the supinator longus, despite its name, is mostly a flexor of the forearm and he will forget the fact five minutes afterwards; but show him the muscle in action on the living body and he will never forget. So with the other muscles. Anatomy *per se* is the driest and most uninteresting of studies. Applied anatomy, on the other hand, is full of interest, and so we have every reason to hope that Professor Thomson's book will appeal to the medical as well as to the art student.

There is one point about this book which we fancy is new—we refer to photographs of models, with certain sets of muscles in action. These photographs are printed upon one page, and upon the opposite page is a key plan of the figure with the particular muscles in use accurately mapped out. Another point we may mention is the stress laid upon the relative dimensions of various parts of the body in the child and the adult and in the two sexes. The formation of the joints is shown, as a rule, from various points of view, the elbow and knee, being the two joints which are most difficult to draw accurately, and the surface markings of which are very important, are specially fully treated.

To quote from the author's preface: "In place of adapting, as is usual, the method of furnishing a complete description of the bones, succeeded by an equally detailed description of the joints and muscles, I have incorporated them in the description of regions. As each region—a limb, for instance—is considered, its bones, joints, and muscles are described in so far as they have special reference to the surface forms. In this way it is hoped that the student may attain a better grasp of the subject than by the study of isolated descriptions of the various structures involved." The book is got up with all the care and finish which we are accustomed to find in the productions of the Clarendon Press.

Transactions of the Clinical Society of London. Volume XXIX. London: Longmans, Green, and Co. 1896.

WITH commendable promptitude the opening of another session of the Clinical Society has been accompanied by the publication of the Transactions of the past year's work. As we turn over the pages of the volume we do not wonder at this society's popularity, for the book contains the careful records of cases culled from all departments of practical medicine and surgery, many of them being of great interest. Since the foundation of this society, which in its early days was thought to be encroaching upon domains already occupied by other and older bodies, several new societies have been established dealing with special departments of clinical work, and it might be thought that the Clinical Society would have suffered accordingly. Its series of Transactions, however, sufficiently prove that such fears, if, indeed, they ever existed, were baseless. The society continues to do as good work as it ever did, and its meetings were never more fully attended. We have in these columns given ample reports of the proceedings of the society, so that it is not necessary to do more than take a brief glance at the contents of this interesting volume. Amongst what may be termed the "novelties" of treatment here recorded may be cited the case communicated by Dr. Hale White and Mr. Golding-Bird of Membranous Colitis treated by Right Colotomy and subsequent Closure of the Wound. The object of this procedure was to give rest to the affected colon, and it was justified by the striking relief afforded, although the patient unfortunately shortly afterwards died apparently from acute peritonitis attributed to the rupture of a suppurating pelvic cyst or gland. There is an encouraging series of cases of Splenectomy for Rupture related by Mr. Bernard Pitts and Mr. Ballance, noteworthy for the success attending the operation, as well as for the careful records that were kept of the condition of the blood and for the valuable summary which the authors append. Dr. W. S. Colman and Mr. Ballance contribute an equally careful and detailed account, beautifully illustrated, of a case of Neoplasm Cyst in the region of the Angular Gyrus causing sensory aphasia, alexia, and agraphia, in which an operation was resorted to. Amongst other papers of interest we may mention the case of Addison's Disease treated by Suprarenal Extract recorded by Dr. S. Ringer and Dr. A. G. Phear, a series of cases of Enterectomy by Mr. Mayo Robson, a series of cases of Movable Kidney by Dr. Newman, the Successful Suture of a Duodenal Ulcer by Mr. L. A. Dunn, and a record of a rare form of Intussusception—viz., through a patent Meckel's diverticulum—by Mr. Golding-Bird. Dr. S. West discusses the subject of Serous or Albuminous Expectoration, which some ten or fifteen years ago was so fully treated by French writers as a phenomenon following paracentesis thoracis. There is a goodly appendix of "Card Specimens," including three remarkable examples of Absent Tibia by Mr. H. H. Clutton, well illustrated. Indeed, the volume is quite equal to any which have preceded it and constitutes a clinical record of great value.

An Introduction to Human Physiology. By AUGUSTUS D. WALLER, M.D. Aberd., F.R.S., Lecturer on Physiology at St. Mary's Hospital Medical School. London: Longmans, Green, and Co. 1896. Third Edition. Pp. 640. Price 18*s.*

THAT book must be pronounced to have been well planned and well executed in which, when the third edition is published, the author can find scarcely anything to alter and to which there is next to nothing to add. Yet this is the result of Dr. Waller's careful revision of his text-book. Physiology is so wide a subject, has intricate relations with so many collateral sciences, and is illustrated by sidelights from so many branches of knowledge, that the temptation to digress from the main road is almost irresistible; and it requires the experience derived from long habits of teaching to limit the scope of a wide area so as to dwell upon what is important and necessary for the student to know whilst passing lightly over what is unimportant and unnecessary. We have no reason, after having frequently consulted this work, to alter the opinion we formed and expressed in regard to the last edition, that it is one of the best manuals of physiology for the student and practitioner in this or in any other language. It is concise without being obscure, and bears on every page the evidence of the thought and intelligence of a master hand. No better book can be placed in the hands of the student.

Medical and Surgical Reports of the Boston City Hospital. Boston: Published by the Trustees, 1896. Pp. 281.

THIS volume contains twenty-three articles, all of which are interesting. Not far from the beginning of the book Dr. Abner Post gives an account of three cases of "pseudo-

malignant œdema," the qualification being apparently due to the fact that while the clinical symptoms in all the patients were essentially those of the condition called malignant œdema or emphysematous gangrene, yet in two of them the hitherto recognised bacillus of that disease, although specially sought for, could not be discovered. Staphylococci and streptococci, however, were abundant, and in addition to them great numbers of an unidentified, rather large bacillus with rounded ends, preferably but not entirely anaerobic and evolving gas copiously, but not liquefying the culture gelatin. All these patients had lain some time on the ground after sustaining their injuries, which were compound fractures in two cases and an extensive suicidal laceration of the arm in the third. A paper on the Surgical Out-patient Department gives some useful suggestions on the subject of dressings, bandages, and splints. Dr. Edmund B. Spear discusses the relation of the thyroid gland to certain diseases of the ear, and suggests, as one of the functions of the gland, that it is "the centre of a nervous system which controls, through connexions with the sympathetic ganglia and distant nerve centres by a peculiar inhibition, all the bloodvessels and the centre of the circulating system, the heart itself." In a paper on Flatfoot among Hospital Nurses Dr. R. W. Lovett states that one of the most characteristic symptoms of this deformity is pronation, or "rolling-in" of the ankle, a condition which is anatomically and necessarily associated with abduction of the forward part of the foot, especially of the great toe. He gives a detailed description of a properly shaped boot. Dr. George B. Henshaw contributes an article twenty pages in length on the treatment of typhoid fever by thymus extract, prepared according to the method described by Fraenkel, Wooldridge, Brieger, Kitasato, and others. He gave subcutaneous injections of the fluid to thirteen cases, with satisfactory results in eight cases and no special effect in four; with the remaining patient the treatment was not commenced till the third week of the illness and in the following week death occurred from intestinal hæmorrhage.

JOURNALS AND REVIEWS.

Brain: a Journal of Neurology. Parts LXXIV. and LXXV. London: Macmillan and Co. Summer and Autumn, 1896. Price 7*s.*—The careful and exhaustive studies which are being pursued by Dr. Henry Head upon the distribution of pain and tenderness in cases of visceral disease are continued in an article dealing with Diseases of the Heart and Lungs. The interest of this subject is enhanced by the fact that it opens up a field of clinical observation hitherto unexplored, but which will doubtless lead to an amplification and revision of our opinions on the significance of pain as well as to a wider conception of reflex action. Dr. A. Waller concludes his interesting article on the Influence of Reagents on the Electrical Excitability of Isolated Nerve, which illustrates how results of real practical value may be obtained from a comparatively simple method of research. Dr. Aldren Turner and Dr. Ashley Mackintosh give a careful clinical and pathological record of Three Cases of New Growth with Cavity Formation in the Spinal Cord in a paper that adds to our knowledge of the course and symptoms of syringomyelia. Dr. Alex. Bruce and Dr. R. Muir demonstrate the existence in the lumbo-sacral region of the spinal cord of a tract which undergoes descending degeneration and to which they suggest the name of "descending septo-marginal tracts." Dr. R. T. Williamson writes on the Symptomatology of Gross Lesions involving the Præ-frontal Region of the Brain; whilst Dr. J. Collins of New York has a contribution upon the Pathology of Epilepsy, with a Description of the Nerve-cell Changes in the Cerebral Cortex. There is a brief note by Dr. F. J. Allen on Mirror Writing, which he thinks is a not uncommon latent faculty elicited when an attempt is made to write with the left hand. A Critical Digest upon Disseminated Sclerosis and some elaborate reviews complete a number of considerable value and interest.

The Journal of Anatomy and Physiology, Normal and Pathological, Human and Comparative. Vol. XXXI. New Series, Vol. XI. Part 1. Oct., 1896. With seven Plates. London: Charles Griffin and Co. Price 6*s.*—Although the lamented death of Sir George Humphry has deprived the *Journal of Anatomy and Physiology* of its founder and the chief whose name has so long been associated with it, the contents of the present number show that its vitality is unimpaired and that there is no dearth of excellent workers to carry on the work inaugurated by the distinguished Cambridge Professor of Anatomy and Surgery. The first article is by Dr. David Hepburn of Edinburgh on the Trinil Femur, so named from the place in Jamaica where it was found and which has been regarded by its discoverer, Dr. Eugène Dubois of the Netherlands, East India Army Service, as belonging to an animal intermediate between the higher apes and man, to which he has given the name of Pithecanthropus erectus. A skull cap and two molar teeth were found with the thigh-bone. Dr. Hepburn gives careful comparative measurements of the femora of various human races and simians, and points out that the supposed peculiarities of the Trinil femur are to be met with in several different races of man now existing, as in the Bushman, Esquimaux, and others, and consequently that no separate intermediate class should be formed to receive the animal to which this particular femur belonged. 2. Dr. D. Berry Hart of Edinburgh contributes a preliminary note on the Development of the Clitoris, Vagina, and Hymen, which he illustrates with many drawings on six plates. 3. Messrs. F. G. Parsons and Arthur Keith supply the sixth annual report of the Committee of Collective Investigation of the Anatomical Society of Great Britain and Ireland 1895–96. It deals with the position of the eighth costal cartilage, the relation of the great sciatic nerve to the pyriformis muscle, the mode of termination of the internal plantar artery, and other points. 5. Dr. E. Barclay Smith of Cambridge writes on Some Points in the Anatomy of the Dorsum of the Hand, with Special Reference to the Morphology of the Extensor Brevis Digitorum Manus. 6. Dr. T. H. Bryce of Glasgow has an article on Certain Points in the Anatomy and Mechanism of the Wrist Joint reviewed in the light of a series of Roentgen Ray Photographs of the Living Hand. This article is illustrated by some excellent and instructive photographs in which the position of the wrist bones and of their articulating surfaces is very clearly brought out, these last being by no means so closely adpressed to one another as it is usual to suppose. 7. Dr. G. Elliot Smith of Sydney writes on the Fornix Superior, giving a description of certain fibres that proceed from the gyrus fornicatus and corpus callosum and enter the septum pellucidum. 8. Dr. A. Birmingham of Dublin discourses on the Topographical Anatomy of the Spleen, Pancreas, Duodenum, and other Viscera, illustrated by a cast of these viscera hardened *in situ*. 9. Dr. George Bell Todd of Glasgow has a contribution on the Use of Colour Screens for Micro-photography, with a plate. The plate shows the improvement that results from the use of an orange screen, and the still further advantage that results in clearness of detail from the use of a red screen, the object photographed being a thin section of pteris. 10. Dr. David Hepburn of Edinburgh writes on the Platymeric, Pilastric, and Popliteal Indices of the Race Collection of Femora in the Anatomical Museum of the University of Edinburgh. 11. Dr. Edward Fawcett of Bristol contributes an article on the Sesamoid

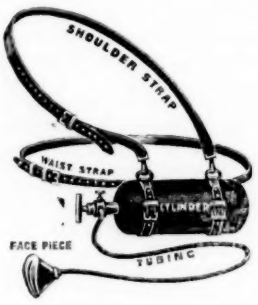
Bones of the Hand, a skiagraphic confirmation of the work done by Pfitzner.

Blackwood's Magazine. No. 973. November, 1896.—The article in this old-established periodical which has most interest for us is that by Sir T. Grainger Stewart on "Our Duty in Regard to Vaccination." Based upon the final report of the Royal Commission, to whose labours full justice is given, it constitutes one of the most temperate and logical pleas in support of universal vaccination which have been advanced. Sir T. Grainger Stewart deals tenderly with the dissentient statement of the two Commissioners, but cannot avoid expressing surprise at the conclusion at which they arrived from the overwhelming evidence adduced before the Commission upon the efficacy of vaccination. He thinks, however, that the recommendations of the majority are lacking in decisiveness, or, rather, in pushing their opinions to their logical conclusion. The case for vaccination and re-vaccination having been fully established, he would, whilst improving the methods and procedure, counsel legislation in favour of compulsory vaccination and re-vaccination, attaching "important penalties" to non-compliance with the law. Indeed, he considers that, Utopian as it may seem, it would be well to "insist upon primary vaccination in infancy, a second vaccination at the age of ten or twelve, a third at about twenty, and possibly another at thirty." He leaves to others the crucial point of determining how such recommendations could be enforced, and judging from recent experiences in actual small-pox outbreaks we must reluctantly believe that it would be impossible to enforce any such penal laws in this country. At the same time we cannot too heartily endorse his recommendation that "every effort should be made to satisfy the country of the untrustworthiness of the assertions of the anti-vaccination propaganda, and so to inform public opinion on the matter as to discourage those who seek to win popularity in ill-informed quarters by unscrupulous pandering to ignorance and prejudice." The fact is that, conscious of the value of Jenner's memorable discovery, we have been content to leave its defence in the hands of the official guardians of public health, whilst the opponents have had it all their own way in their guerilla warfare in press and platform, which they have carried on with a zeal worthy of a better cause. The notice of John Gibson Lockhart, founded on Mr. Andrew Lang's recent memoir of the biographer of Scott and early editor of *Blackwood*, is very interesting and appreciative.

New Inventions.

COMPRESSED OXYGEN: ABBOTT'S GAS CYLINDER SLING.

THIS arrangement has been devised by Mr. T. B. Abbott, of Aberford, Yorkshire. It was suggested by his personal experience as a medical member of the rescue parties engaged after the frightful colliery explosion at Micklefield in May, 1896. Compressed oxygen gas was provided as soon as the work of rescue commenced and its restorative value was found to be very great. But the impossibility of carrying the cylinders over the extensive falls of stone in the workings along with the necessary dressings, restoratives, and lamp, showed Mr. Abbott that smaller cylinders were needful, and also that the cylinders must be slung in such a way as to be put on or off in a moment, both arms being left free to manipulate the gas, or to give restoratives, or to use dressings, &c. The sling is suited to the 10 ft. cylinders (or smaller), and it enables this supply to be taken wherever a man can pass in the pit.



The makers are Messrs. Reynolds and Branson, 13, Briggate, Leeds.

A NEW UTERINE FLUSHING CURETTE.

THE employment of a flushing curette has certain advantages over the plan of first using a simple curette and then washing out the uterine cavity by means of a double-channeled tube. It removes all tissue as it is detached, washes out the blood before it has time to clot, and by its use one instrument does the work of two. But the flushing curettes in common use suffer from several grave defects. The faults in the ordinary type of instruments are as follows:—1. The stem is much too narrow; in consequence the stream which flows through is small and the least portion of débris is sufficient to block the channel altogether; further, the instrument is very easily bent or snapped at the junction of the stem with the handle. 2. The curetting portion is much expanded in comparison with the stem. The result of this is that after scraping, it is sometimes a difficult matter to withdraw the curette, as the irritation of the uterus often causes contraction of the muscular fibres at the internal os. To obviate these defects I have modified the instrument in the following particulars:—1. The stem of the instrument is of considerable thickness (corresponding to No. 14 of Matthews Duncan's uterine dilator). In this way a good flush of water is obtained. 2. The curetting portion is of the same width as the stem so as to permit of easy withdrawal. A slight bend forwards is given to the cutting portion, so as to allow it to come into contact with a flat surface. 3. The under surface of the stem (that corresponding to the cutting edge of the curette) is grooved after the manner of Budin's uterine tube. The object of this is, of course, to allow a good return flow and prevent over-distension of the uterine cavity. The sectional area of the groove should be larger than that of the lumen of the tube.

The method I adopt in curetting is to pass Duncan's solid dilators up to No. 16 and then to pass in the curette, which, from one point of view, exactly resembles No. 14 dilator. For curetting soon after incomplete abortion, when the cervix is easily dilateable, a larger instrument is employed. I have used this form of curette in a large number of cases during the last twelve months and am very well satisfied with it. It is made by Messrs. Arnold and Sons, who have taken much trouble to meet my wishes.

ARCHIBALD DONALD, M.R.C.P.Lond., M.R.C.S.Eng.
St. Peter's-square, Manchester.

THOMAS WAKLEY,

THE FOUNDER OF "THE LANCET."

A BIOGRAPHY.[1]

CHAPTER XLIII.

Two Sections of Wakley's Life completed.—Further notice of Wakley as Journalist.—The Growth of THE LANCET.*—Wakley's Personal Influence ever present.—His Views on Educational Developments and their Foresight.—The Charter of the College of Surgeons in 1844.—The Medical Act of 1858.—The Anatomy Acts.*

THE career of Thomas Wakley has now been nearly told. His rise from the position of youngest son of a gentleman farmer to that of senior Parliamentary representative of the largest borough constituency in the kingdom and coroner for Middlesex has been traced step by step. The influence that he exercised upon the administration of law and justice in the coroner's court still abides. His work in Parliament has been chronicled with such fulness as the scheme of this biography allowed, and if a disproportionate amount of space appears to have been allotted to minor measures or matters of no distinct public importance, it is because the intent has been to write the life of Thomas Wakley and not an historical account of the politics and social developments of the reign of George IV., the reign of William IV., and the first twenty-five years of her present Majesty's reign. Where Wakley was the moving spirit or leader the circumstances which led up to his acts and their outcome have been given in full. Where he simply followed others it has been considered sufficient to mention the fact, assuming that the parts played by such men as Peel, Cobden, the fourteenth Earl of Derby, Brougham, Melbourne, Macaulay, Joseph Hume, Gladstone, Bulwer Lytton, Benjamin D'Israeli, and many others whose names have been scattered up and down these pages, are familiar to the reader, forming as they do the national history of the first half of the nineteenth century. To avoid continual breaks in different parts of Wakley's career, whereby great difficulty would have been caused to the reader, this life of the Founder of THE LANCET has been written in three separate sections. Firstly, his journalistic career has been described; secondly, his Parliamentary career; and thirdly, his career as coroner. The latter two sections are now complete; to the first we must return, merely premising that the real Wakley is seen in a consideration of all three sections, blended as his triplicate work was in one inextricable, often incoherent, but always resolute and passionate, struggle to attain the objects of general and medical reform as he understood them.

The detailed story of THE LANCET, its work and its aims, was broken off in the year 1833, when it became necessary to describe the Editor's parliamentary career, with a summary of the work of the paper during its first decade, showing how it passed, in the opinion of the profession, through every phase of appreciation from contempt to repute. From 1833 upwards to the time of Wakley's death in 1862 the future of THE LANCET justified his fondest hopes. He treated it as an inexhaustible gold mine and seriously jeopardised its material prospects thereby; but if the paper was true to his implicit belief in its prospects he also was true to his ideal of what the paper should be. Conducted strictly on the lines laid down by an inexperienced and hot-headed youth, it established for itself a secure and enormous success. And from those lines THE LANCET has never deviated. Alterations in circumstances have caused it to expand considerably in most directions, to contract in a few, and to modify in many. Wakley's original prefaces could not be placed before the next volume of THE LANCET because the abuses to which they refer with bitter invective no longer exist. Yet the various departments of the paper at the present day were all inaugurated by him or were the natural outgrowth of his parental scheme, while the fact that the abuses on which he had so much to say have disappeared was largely his doing. After 1833 THE LANCET was no longer a weekly diary of its Editor's hopes of, and aims towards, medical reform. For the first ten years of its existence the paper was Wakley's life, and every word of it must be considered by anyone who would tell the story of that life. The leading articles were his personal impressions on medical politics; he inspired the reviews and made the jokes. Hospital reports were obtained by him, and from their consideration he proved to the hilt the accuracy of many of the numerous allegations which he had made against the medical charities of the metropolis. Legal proceedings decorated the pages of the paper frequently, and in a large proportion of these trials Wakley was either plaintiff or defendant.

But as his life grew larger a medical paper could no longer form even an expanded diary of his doings; while as THE LANCET grew and waxed strong the necessity for constant justification of his acts and its words went. Success justified both it and its founder, and the extremely personal nature of much of the earlier writing became uncalled for. THE LANCET no longer required to be an apology for the life of Wakley. It became more entirely a fulfilment of the promise conveyed in its later sub-title "A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News." In it were to be found, as would be expected from this title, the lectures, official and otherwise, delivered by the great masters of the sciences, and reviews of all important books falling under its comprehensive heading. The best teachers at the schools sent contributions; the articles on professional politics were written by men within the ruling circles of the different bodies; and the news was contributed from numerous centres by persons pecuniarily interested in making it copious and up to date. Wakley's spirit, however, presided over all. His views were prominently put forward in the leading articles and his plans for reform continued to be as religiously carried on in his large and successful journal as ever they were in the bygone days of persistent struggle. The subjects on which he continued to write himself were medical education, medical politics, the canker of quackery, and the professional welfare of the medical man. Most of the outspoken leading articles upon these topics which appeared in THE LANCET between the years 1833 and 1850 were from his pen, and they display not only courage and sincerity, but a really remarkable prescience. For example, in 1843 a concession was made by the College of Surgeons to public opinion and a new Charter was applied for and obtained under which the Council should no longer consist of twenty-one persons perpetually entitled to elect their successors and endowed with absolute power over the commonalty. Under this Charter the Fellows of the College were created and electoral and political privileges confided to them—a body practically unlimited in numbers. Wakley detected at once that the reform did not go far enough in one direction and that in others it was no reform at all. The Charter abolished

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., XV., XVI., XVII., XVIII., XIX., XX., XXI., XXII., XXIII., XXIV., XXV., XXVI., XXVII., XXVIII., XXIX., XXX., XXXI., XXXII., XXXIII., XXXIV., XXXV., XXXVI., XXXVII., XXXVIII., XXXIX., XL., XLI., and XLII., were published in THE LANCET, Jan. 4th, 11th, 18th, and 25th, Feb. 1st, 8th, 15th, 22nd, and 29th, March 7th, 14th, 21st, and 28th, April 4th, 11th, 18th, and 25th May 2nd, 16th, 23rd, and 30th, June 6th, 13th, 20th, and 27th, July 4th, 11th, 18th, and 25th, Aug. 1st, 8th, 15th, 22nd, and 29th, Sept. 12th, 19th, and 28th, Oct. 3rd, 10th, 17th, 24th, and 31st, respectively.

the inherent right of the members of being appointed to the governing body and by implication to the office of president, while it set up an invidious class distinction within the ranks of the profession which was certain sooner or later to breed trouble. Well, that trouble is with us now—fifty years later. The language of modern contention is moderate, but no one can mistake the fact that beneath the civilly worded resolutions of the different associations for collegiate reform there lie a very real sense of injustice and a lively determination to obtain redress. Again, in 1858 came the great Medical Act under which the General Council of Medical Education and Registration of the United Kingdom was constituted. The Act was a reform, but in so far as it represented the practical outcome of the patient and strenuous efforts of Wakley, Warburton, Hume, and one or two others it was not a complete success. "After a struggle of thirty years," wrote Wakley, "it is something to have advanced a single step in the right direction; it is an important one, and only the first. As a beginning, however, we hail it as a great boon; but we only regard it as the commencement of a series of important changes." He then proceeded to point out the viciousness of the principles upon which the members of the Council were chosen in terms which nowadays would all be covered by the phrase that he demanded a more direct representation of the body of the profession. The method in which such representation could be made more direct he indicated by reference to the representative of the College of Surgeons upon the General Medical Council, saying that if this gentleman is chosen by a council—that of the College of Surgeons—not itself elected by the members, he is no representative of the members. Well, again this very argument is now being logically and forcibly used in the campaign of one of the candidates for a seat upon the General Medical Council as a direct representative of the profession.

Moreover, Wakley was as fortunate in his prognostication of good as of ill, as will be shown by the part that he played in the passage of the Anatomy Acts. Allusion has been made to the position of hospital students in Wakley's day as regards anatomy and the difficulty of obtaining bodies for dissection. This difficulty and the institution of the vile trade of the resurrectionist which followed as a natural consequence upon the scarcity of subjects were recognised on all hands as a position requiring amendment. The large sums paid by students to obtain materials wherefrom to learn practical anatomy, and the poor substitutes of plates and diagrams with which they had too often to be contented, were grave blots on a system of medical education to the darkness of which the horrors of rifled churchyards added in no small degree. Suddenly a tremendous element of terror was introduced into the situation by the tragedies in Edinburgh, with which the names of Burke and Hare are for ever associated in infamy. The facts of the tragedies are too well known to call for a detailed description; suffice it to say that these two men, frequently with the assistance of a woman named MacDougal, were during the years 1827 and 1828 engaged in carrying on a ghastly traffic in human bodies. Their plan was to induce strangers, preferably lads or women, to accept the shelter of their roof. The victims, having been stupefied by drink, were deliberately smothered and their bodies sold to certain Edinburgh surgeons for dissection. Hare gave evidence for the Crown and admitted having been implicated in a series of these frightful crimes, and his evidence so incriminated Burke as to lead to a sentence of death being passed on that man. Burke afterwards made a confession admitting his guilty knowledge of murders extending over quite a long period. The result of the excitement caused by these revelations effected what no amount of sober representation on the part of the managers of anatomical schools had been able to obtain. A Parliamentary Committee was appointed to inquire into the study of anatomy as practised in the United Kingdom and into the best method of obtaining bodies for the purpose.

Mr. Henry Warburton, whose name has often been mentioned as a practical champion of the true interests of the medical profession in Parliament, was appointed chairman and the sittings began on April 28th, 1828. The first witness was Sir Astley Cooper, who, after pointing out the necessity of practical anatomy for the proper education of a surgeon, went on to say that teachers of anatomy were completely "at the feet of the resurrection men." Subjects for dissection were obtained almost exclusively by exhumation, with the exception of the negligable quantity which were handed over by executioners in pursuance of the sentence of a criminal court. It was the fact that the bodies of executed murderers were the only legal subjects of dissection in the kingdom that caused such difficulty in obtaining corpses for the medical schools; the relatives of the dead would not allow the bodies of their friends to be treated in a manner that was by law reserved for the utterly criminal and disgraced. As to the question of price, Sir Astley Cooper said that in his student days subjects cost but two guineas, but that now ten guineas were not uncommonly given. When asked how the price was kept up he said that one resurrection man would spoil bodies he did not want so that a rival body-snatcher should not get them and thus glut the market. He said that sextons were nearly always in the pay of resurrectionists, who were often "persons of property." Among the other witnesses were Brodie, Abernethy, and Joshua Brookes. These all gave evidence as to the necessity of dissection, and the last named, whose school in Blenheim-street was one of the largest in London, deposed that he was so much at the mercy of resurrection-men that he had recently been subjected to outrage for not giving a douceur of £5 to certain of them at the beginning of each session. The ruffians had obtained several highly decomposed bodies and had laid them or strewed parts of them in the streets adjacent to his dissecting-room so as to enrage the populace against him. In his student days Joshua Brookes added that he had given two guineas per body, but recently he had had to pay as much as £16.

Wakley was called as a witness in recognition of the powerful articles in the early numbers of THE LANCET dealing with the inadequacy of the medical education of the day. After the usual evidence as to the necessity for dissection he said that in 1815 and thenceforward until 1822 bodies had been sufficiently plentiful for the wants of London students. But in 1823 the College of Surgeons drew up a by-law under which the Council declared that they would not accept certificates of dissection except for work that had been performed in "the winter season." The obvious effect of this was to increase the demand at that season and to raise the price. Wakley considered the dissecting-rooms during the winter to be much overcrowded with students and under-supplied with bodies. He laid the whole blame on the objectionable by-law of the College of Surgeons, which limited the number of recognised institutions and ruined the private schools. He said that the increased influx of pupils brought about by these by-laws had been the cause of the suddenly increased demand for subjects and consequent running-up of the prices. He went on to show that 700 bodies per annum would be ample to supply the wants of London, and that more than 1000 unclaimed bodies were buried by parish authorities in the metropolis yearly.

The next year Mr. Warburton introduced his first Bill, the gist of which was "that men and women, males and females, who died in workhouses or who had the misfortune

to die in hospitals without being claimed within a certain time of death should be sold for dissection." This Bill was not clear about licensing anatomy schools, nor did it provide for the Christian burial of the remains after dissection. With slight modifications it passed the Commons, but when Lord Calthorpe introduced it in the spring of 1829 into the Upper House it was opposed by a group of peers headed by the Archbishop of Canterbury and withdrawn. Soon after the withdrawal of the first Bill a new tragedy—this time in London—called attention to the absolute necessity for the legal regulation of the study of anatomy. An Italian boy, aged about fourteen, who made his living by exhibiting tame mice in the streets, was enticed by two ruffians—Bishop and Williams—to their den in Bethnal Green one autumn night in the year 1831, where he was murdered by being thrust head foremost into a shallow well. When his struggles ceased his teeth were extracted, and the two murderers, with an accomplice named May, set out to dispose of the body. Some suspicious circumstances, however, attracted the attention of Mr. Partridge, the demonstrator of anatomy at King's College, to whom the body was offered, and the murder came to light, both men being convicted and executed.

As the result of the popular sensation Mr. Warburton thought the time had arrived to introduce a second Anatomy Bill. This, although it met with some opposition in the Commons, passed both Houses without much alteration and became law in 1832. In the debates the same arguments were used as had been previously employed. They were founded on the medical evidence of Astley Cooper, Wakley, and others, and on the revelations of the Edinburgh and London tragedies, and amounted to an assertion, which was not contradicted, that if bodies were not forthcoming by legal methods murder would ensue. The following is briefly an account of its provisions:—

"An Act for regulating Schools of Anatomy, by which (after abolishing the former practice of the dissection of criminals after their execution) it is provided that the executor or other person having lawful possession of the body of a deceased person, and not being entrusted with it for interment only, may permit the body of such person to undergo anatomical examination, unless in his lifetime the deceased shall have expressed, in such manner as in the Act specified, a wish to the contrary; or unless the surviving husband, or wife, or known relation of the deceased shall object; and further that the Secretary of State for the Home Department may grant licences to practise anatomy to any Members of the Royal College of Physicians or Surgeons, or to any graduates or licentiates in medicine, or to any professor of anatomy, medicine, or surgery, or to any student attending any school of anatomy, the application for such licence being countersigned by two justices of the peace; and persons so licensed may receive or possess for anatomical examination, or examine anatomically under such licence and with such permission as aforesaid any dead body; but no anatomical examination is to be conducted save at some place of which the Secretary of State has had a week's notice, and the Secretary of State may appoint inspectors for all such places, who are to make quarterly returns as to the dead bodies carried in for examination there."[2]

To the value of this Act Wakley often bore testimony in THE LANCET, but at the same time he saw blemishes in its working to which he alluded in terms that might almost have led his readers to suppose that he considered the defects to overshadow the advantages. Wakley found fault with Warburton's Act because it put no restraint on the parochial authorities with regard to the unclaimed dead, but left them free either to dispose of the bodies to their own advantage or to bury them as they pleased. He desired to compel the parochial authorities and the superintendents of hospitals and asylums to forward notice to the Inspector of Anatomy whenever a dead body should be in their possession under the circumstances described in the Act, and he further desired that the Inspector should distribute such bodies not only to the schools recognised by law but to those in proportion to the number of students. He did this to defeat the manœuvring of the big hospitals against the smaller ones and against the private schools. The wealth of the big institutions enabled them to obtain bodies to the exclusion of rivals who frequently offered better tuition at lower fees, and as an indication of the fact that Wakley was right may be quoted the conduct of the treasurer of Guy's Hospital three years after the passage of Warburton's Act. This gentleman undertook that his institution should receive all the sick paupers of the Southwark Union and all incurables without the usual weekly subsidy from the guardians on condition that every body available should be sent to his school and no other!

Wakley's general praise of this Act was as well bestowed as his general blame of the Charter of the College of Surgeons granted in 1844, or of the Medical Act of 1858. The latter Acts he foresaw had not settled the points they purported to deal with, and future controversy was inevitable. The former he believed to have virtually abolished terrible dangers to the community—the danger of uneducated surgeons and the danger of stealthy assassination. The faults which he found in the Anatomy Act have since been removed, some by time and some by legal amendment. It is open to an institution to make a private bargain to ensure to itself a supply of bodies, but all such bargains are known to the Inspector of Anatomy, who distributes the subjects strictly in proportion to the number of students. If an institution has a private supply of its own, so many the fewer subjects does it require, and does it obtain, from the public supply. The Act has provided, as Wakley said that it would, an adequate number of bodies for the teaching of anatomy in the medical schools, and has abolished the trade of the resurrectionist, with its daily routine of impiety and its occasional divagations into murder.

(To be continued.)

[2] 2 and 3 Will. IV., c. 75

HOSPITAL FEES: PORTSMOUTH.—The Portsmouth town council have drawn up a scale of charges for patients at the infectious diseases hospital. Persons out of employ and those whose income from all sources does not exceed £1 per week will be, according to the scale proposed, admitted free; 20*s.* to 25*s.* weekly at a charge of 2*s.* 6*d.*; 25*s.* to 30*s.* weekly, 3*s.* 6*d.*; 30*s.* to 35*s.*, 4*s.* 6*d.*; 35*s.* to 40*s.*, 6*s.*; 40*s.* and over to be fixed by the committee according to income. Single men earning 25*s.* weekly are put down to pay 7*s.* 6*d.*; single women earning under 20*s.* weekly free; servants and assistants not less than 10*s.* weekly; children of colour sergeants and sergeants, 2*s.* 6*d.*; and of corporals and privates, 2*s.* This scale, however, has been referred back to the committee.

TEMPERANCE BREAKFAST TO MEDICAL STUDENTS.—On the 29th ult. the president and council of the British Medical Temperance Association held a breakfast meeting for medical students at the Manchester Hotel, Aldersgate-street, London, at which between fifty and sixty students were present, representing nearly all the schools in the metropolis. Sir B. W. Richardson presided, supported by Dr. Sims Woodhead, Mr. W. McAdam Eccles, Dr. Heywood Smith, Dr. J. J. Ridge, and others. The president stated that during the last five months no fewer than eighty-eight new student associates, all of them total abstainers, had been enrolled, and there were now nearly 200 in the association. Addresses were given by Dr. Sims Woodhead and Mr. W. McAdam Eccles, earnestly advocating total abstinence. Dr. Heywood Smith moved a vote of thanks to the president, which was seconded by the honorary secretary, Dr. Ridge, who announced that the association offered a prize of £5 for the best essay by a medical student in his third winter session on the subject of the Action of Alcohol on Digestion and Nutrition.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 7, 1896.

ALL persons who wish well to hospitals will rejoice to see that we have initiated an inquiry into the question of hospital abuse. Though the inquiry is still only beginning there is every reason to think that it will bring to light some startling facts. It will show that the abuse of hospitals obtains on a large scale; that it affects town and country hospitals alike; and that if any effective remedy is to be applied it must be by a thorough recognition of the common interest and objects of all institutions of the sort. We would bespeak for our Special Commissioner the assistance of all persons, lay and professional, who can help him in his investigations and supply him with well-authenticated facts bearing on the subject. They may rest assured that such investigations are conceived in no spirit of hostility to voluntary hospitals, which are in truth the glory of our country, and have been of enormous value to the poor, as well as in the promotion of medical education and the development of the medical art. On the contrary, our Commissioner's investigations are intended to further the real prosperity of such charities and to save them from the discredit which must accrue to them from bad administration and the indiscriminate use of their funds for the relief of those who are not necessitous.

There can be little doubt that the subject is one of the greatest interest to the profession and that the profession is mainly responsible for the evils complained of. We cannot go so far as to acquit the subscribers to hospitals who supply letters of admission or out-patient letters promiscuously to all who ask for them. Still less can we agree with a recent speaker at the Mansion House when this subject was under discussion, who said that the council of the Hospital Sunday Fund and other bodies have no right of criticism and no duties of remonstrance on this subject. This seems to us a serious error involving the neglect of a great public duty. But having said this it remains true that the medical profession is deeply interested in this subject and is deeply responsible for the evils which our Special Commissioner has exposed wherever he has gone, and which are admitted to exist everywhere. The responsibility of the profession depends on this circumstance, that hospitals are essentially medical institutions. The whole machinery and purpose of them are medical. The staff of the hospital, so to speak, is the *deus ex machinâ*. Take that away and the hospital has no function and no ground of appeal to the charitable public. The services of the staff are gratuitous, and surely the very least its members can be expected to demand as a condition of their services is that there shall be no abuse of the charity they administer, and that it be not spent on persons who can afford to meet their own medical wants, who live in houses of £100 a year rental, or buy farms worth £10,000, or can afford to pay £40 for an operation, or who have an annual income of £4000. Short of such gross cases of abuse, to which managers of hospitals and the Council of the Metropolitan Hospital Sunday Fund are disposed to shut their eyes, there are daily thousands of cases of persons using the hospitals of the country, and especially of the metropolis, unjustly and in a way never contemplated by pious founders. What our Special Commissioner has brought to light with powerful effect is the use of the metropolitan hospitals by such persons as a means of escape from the proper criticism of their own neighbours that they are unfit cases for charitable relief in their own provincial hospitals. A person who can easily pay a sufficient fee to a local practitioner—not necessarily the highest fee of the fashionable consultant—finds his way to London, poses as a hospital or illiterate patient, and gets advice or perhaps an operation performed gratuitously. This is a monstrous evil and must be stopped. We do not advocate extreme or severe application of wage-limits or even rentals as a test of poverty. Poverty is a relative thing, and the incidence of a grave, a long, or a recurring illness, or one affecting numerous members of a family, may make a man with high wages or a high rent poorer than one with lower wages or lower rent. This is an important truism. But the *onus probandi* must rest on the person having good wages or paying high rent to show that in his particular case they are fallacious as tests of means. The charge against hospital managers, especially in London, and particularly in hospitals having pay wards, is that they suffer themselves to be deceived by easy misrepresentations or after a form of inquiry which is quite ineffective for its purpose.

Two principles seem to be suggested by the reports on Hospital Abuse which we have already published. Firstly, that the authorities of metropolitan hospitals must take special precautions to guard their charities from being misused by provincial persons, for whom they were never intended, and especially by persons of good means. It may be flattering to these authorities and to their medical officers to think that cases which baffle provincial physicians and surgeons repair with hope and confidence of relief to the great hospitals of London. And men "are saved by hope." But when London hospitals are used simply as a blind and the much-exercised charity of London is asked to pay for that which the patient can easily find and pay for in his own town the compliment to the superior talent of London hospitals is not so apparent. Secondly, our Special Commissioner shows that this is an evil affecting consultants and general practitioners alike and that they should work together and act promptly for its correction. Many a consultant and an operator is thus cheated out of his legitimate fees as an expert and required to do that for nothing which he or a younger colleague would be glad to do for a reasonable fee. The pride of many fashionable consultants, which properly prevents them from taking modest fees, drives many patients into hospitals. Consultants are apt to regard hospital abuse as merely a grievance touching the general practitioner, but there are hundreds of young and highly capable consultants who are

deeply injured by a system which is well illustrated in the reports of our Special Commissioner and which must be abolished.

THERE are two sections in the twenty-fifth annual report of the Local Government Board just issued which at the present time are of more than ordinary interest. We refer to the sections under the Public Health clause dealing with the working of the Food and Drugs Act, and to the official reports by General SCOTT on the quantity, and Dr. FRANKLAND on the quality, of the Metropolitan water-supply. Considering, first, that section of the report relating to the administration of the Food and Drugs Act we may at the outset observe that the same arguments relating to the defects of that Act in former years, and to their obvious remedy, apply again with equal force. To begin with, the total analyses made in the last official year was 43,962 which is an increase of more than 4400 over the number made in 1894. And the important and encouraging result of this is that the extent of adulteration has been reduced exactly by 1 per cent., the total percentage of adulteration in 1895 being 9·3, which is the lowest since the passing of the Act in 1895. Nothing could be more convincing, we hold, than that the taking of more samples leads to a distinct diminution of adulteration, and we have maintained as much again and again. There is, however, reason to think that in many districts there is still an indifference on the part of the local authorities to avail themselves of the provisions of the Act, and the result of this lack of vigilance shows that in these districts of the few samples that are taker, no less than 18 per cent. were tampered with—a proportion nearly twice as high as that obtaining in the rest of the country. A very important observation is made in regard to milk, which, as before, continues to be the chief subject of analysis, and certainly in the metropolis, of adulteration also. Thus the proportion of adulterated samples of milk in the metropolis was as high as 19·3 per cent., as against 6·6 per cent. in the thirty-two great towns of England which are included in the Registrar-General's weekly returns and 9·4 per cent. in the counties and remaining boroughs. We have not the slightest doubt that the actual proportion of adulterated samples of milk was much greater, since "in judging of milk the public analyst is often obliged to pass samples which are equal in composition to only the poorest of genuine milk, although he may strongly suspect that he is dealing with samples artificially and not naturally weak." It is high time that legislation should be brought to bear upon this matter with the view of raising milk to a standard of better quality. Milk, next to bread, is the most important article of diet, and yet it is the one subjected most to the tricks of the adulterator. We read absolutely nothing in the report of a question which demands serious consideration—viz., the use of preservatives in milk. In regard to other articles of food, the results of the year's work appear to be about the same, but it is interesting to note that what is true in regard to milk in London is quite the reverse in regard to spirits, for the percentage of adulterated spirits in London was only 10·2, as against 17·6 in the rest of the country. Another obvious defect in the administration of the Act, and one to which we have often alluded, is the present method of obtaining samples. We have frequently pointed out the absurdity of sending an inspector, whose office is made conspicuous by his dress, to buy the samples for the purposes of analysis. The present report furnishes, we consider, further evidence that some modification in this procedure should be made. It appears, for example, that of the 43,962 samples analysed during the last official year 43,300 were obtained by the officers of the local authorities; but 167 were taken by private purchasers, and of these no less than 35·9 per cent. were proved to be adulterated. It is probable, however, that a private purchaser is only led to obtain samples when his suspicions have been aroused. Still it cannot be said that the present method of taking samples by an inspector correctly represents the ordinary way of purchasing samples adopted by the public. Taking the Act as a whole, however, it is working well, and to no one more than ourselves can this fact be a source of greater gratification and satisfaction, since it is admitted that this important section of public health administration had its origin in the memorable Analytical Sanitary Commission of THE LANCET which was instituted by THOMAS WAKLEY in 1851.

Dr. FRANKLAND'S report on the quality of the London water-supply is prefaced by the report of the examiner under the Metropolis Water Acts, General SCOTT, in which some interesting observations bearing upon the recent abnormal conditions under which the companies have had to work during the last period are made. "Phenomenal frost" succeeded by prolonged drought in 1895 has brought to light many defects in the distributive system of supply, and we learn with satisfaction, for one thing, that several of the companies have carried out on a large scale the work of lowering the mains, so that the depths now generally adopted should afford sufficient protection against freezing. It is true that the occurrence in the same year of both severe and prolonged frost and drought is practically without parallel, but that is no reason why these extreme contingencies should not be provided against. In the case of drought this is particularly evident, since in the present year another and even more serious deficiency of rainfall occurred. The question of the employment of cisterns for domestic storage has in consequence been prominently brought forward, and the conclusion of the Local Government Board appears to be that there would be distinct advantage in having properly designed means for storage of water in houses, and we observe that the suggestion we have advanced that taps should be provided drawing directly from the main in addition to a service-pipe from the cistern is upheld. The effect of drought upon the River Lea is much more serious than upon the Thames, and so much so that the volume of water discharged by the Lea is, when drought occurs, "insufficient to meet the requirements of the population of East London in the matter of water-supply." Nor is the effect of frost confined to the distributing services, for the filtering efficiency of the filter beds is seriously interfered with when prolonged frost is experienced. In the bacteriological tables prepared by Dr. FRANKLAND he shows

that during the very severe weather of January, February, and March the London Companies' filters were working very badly—so badly, in fact, as to allow of the passage of a number of microbes considerably in excess of the number taken as the standard of purity. And here we think we have an explanation, as well as confirmation, of the results recently obtained by the County Council experts whose report was the subject of comment in a leading article in our issue of Oct. 24th. The samples selected by the County Council's chemists and submitted to Dr. KLEIN for bacteriological analysis were taken at the very time, we discover, when Dr. FRANKLAND found an excess of bacteria, and it follows that since this indicates some disturbance in the filtering process so suspended matter would be coincidentally found. This is exactly what Mr. DIBDIN'S new "micro-filter" method has done. The cause of this failure to effect efficient filtration during severe frost has been sought by Dr. FRANKLAND, but, as he reports, in vain. His observations, however, on the phenomena of "winter filtration" in London lead him to offer a very curious explanation on this point. He suggests that "the suspended animation of the microbes in ice-cold water causes them to be helplessly carried through the interstices of the filter, whilst at high temperatures they possess active vitality and cling to the sand near the surface." This hypothesis would almost imply that microbes were endowed with tentacles or claws. Whether Dr. FRANKLAND is serious or not in this peculiar view, we are inclined to accept rather the opinion of Mr. FULLER, the official bacteriologist to the Massachusetts State Board of Health, that the inefficiency of filtration in winter is due chiefly, if not entirely, to the difficulty of scraping and cleansing the filters when they are covered with a thick coating of ice. Apart entirely from the season when this condition obtains, it is well known that when the surface of a filter has to be scraped—that is, when about half an inch of the sand is removed from the surface—there is commonly an increase in the number of bacteria in the filtered water, and Dr. FRANKLAND has noted that this increase is greater in shallow than in deep filters and with high than with low rates of filtration; and, inasmuch as the effect of scraping is considerably magnified when coarser descriptions of sand are employed, Dr. FRANKLAND very rightly urges upon the engineers of the London water companies the desirability of using finer sands than those at present employed.

It is evident that the biology of sand filtration is as yet far from being completely understood; and until it is, London can never absolutely depend upon a supply of water which is derived from streams that are liable to contamination by sewage. It should be pointed out that Dr. FRANKLAND and his son Dr. PERCY FRANKLAND have made some most important contributions on this subject, which have thrown considerable light on the best methods for securing water free from contamination and on the best means of providing a supply that shall not be prejudicial to the public health, and it is reassuring to find that the former, in his official capacity as the chemical expert of the Local Government Board, has not overlooked the important discrepancies that may and do occur in times of frost in connexion with the filtering processes. At the same time we think that credit is due to the London County Council for instituting an inquiry which has established and emphasised this fact—that there may be grave deficiencies in the filtering processes at certain seasons which may be of the utmost importance to the health of the community.

A QUESTION arising under the new Poor-law Act is as to whether it applies to public vaccinators; and we were asked[1] if we agreed with the view that it does not apply to them. As a general rule, a public vaccinator also holds the post of district medical officer under the guardians; but we will first consider the case where a medical man holds the post of public vaccinator and no other under the Poor-law. The guardians being for some unaccountable reason the vaccination authority, public vaccinators are appointed by them, dismissed by them, and paid by them at the rate of so much per successful vaccination. The Act applies to "every officer and servant in the service or employment of the guardians of a union or parish" (Section 2), and the term "officer" is defined (Section 19) as including "every officer in the service of an authority to whom this Act applies, whether his whole time be devoted to the duties or not." The opinion has been expressed that these officers do not come within the meaning of the word "officer" in Section 19 of the Act because they serve under contract, which contract may be determined on either side by giving twenty-eight days' notice; but we see no grounds for this opinion. All Poor-law officers hold office under contract, and the fact of its being terminated by twenty-eight days' notice does not appear to us to affect their position at all. The objection that they are paid by a capitation fee is covered by the precedent of "superintendent registrars and registrars of births and deaths," to whom the Act is expressly made to apply by Section 19.

In the case of medical men who hold the dual appointment of district medical officer and public vaccinator the only difficulty appears to be in the rare instances where their vaccination contract may have been determined at a date more than five years preceding the date upon which they may resign or otherwise cease to hold office as district medical officers. In this case the fees received for the performance of vaccination would not form part of the five years' basis upon which the pension should be calculated. We are of opinion, however, that this difficulty (which probably would not often arise) would be met by Section 8, which provides for the return of contributions where the officer loses his employment or ceases to hold office for reasons beyond his own control, or else it would be met by the inclusion of his vaccination fees in the manner about to be mentioned, among his "emoluments" in the calculation of his pension. Upon these grounds we should recommend public vaccinators to acquiesce in the quarterly deductions under the Act, and if they are still holding office as public vaccinators at the time of their resignation as district medical officers the amount of their fees will then be reckoned as part of the

[1] THE LANCET, Oct. 24th, 1896, p. 1188.

"emoluments" of their office and the pension calculated thereon. If, on the other hand, their vaccination contract ceased prior to the medical officership they would certainly be entitled either (*a*) to a return of the deductions made on account of the former (Section 8) or else (*b*) to the inclusion of the average of the five years' vaccination fees, *antecedently* to the termination of their vaccination contract, among the "emoluments" which form the basis for the calculation of their pension.

Although public vaccinators are not expressly mentioned in the Act it seems to us quite clear that the Act applies to them; but in the event of the question being raised in any particular instance, the Local Government Board are empowered by Section 18 to determine any such question which may arise between the guardians and any officer or servant which may be referred to them by either party. The decision of the Board under such circumstances will be binding and conclusive.

Annotations.

"Ne quid nimis."

THE LATE EXPEDITION TO DONGOLA: THE MEDICAL OFFICERS AND THE DESPATCHES.

ALL who were engaged in the late expedition to Dongola have naturally been looking out for the publication of Sir H. Kitchener's official despatch with the names of those mentioned therein for their services on that occasion. The despatch has now appeared and is dated Dongola, Sept. 30th. After describing the advance of the expeditionary force and the more prominent features of the campaign, and extolling the high qualities of endurance, bravery, and discipline exhibited by the Egyptian army, the services of the British naval and military forces are spoken of in highly eulogistic terms, and reference is made to the excellent conduct of the Indian contingent at Suakin. As regards the Medical Service the Sirdar says that during the outbreak of cholera, and in the subsequent advance on Dongola, Surgeon-Major Sloggett, assisted by the other medical officers attached to the British troops, worked with great zeal and energy in the performance of their duties, which were exceptionally onerous throughout the campaign. Alluding to the services of officers attached to the Egyptian army Sir H. Kitchener reports that all those on the medical staff worked indefatigably throughout the various phases of the campaign. It is notorious that the late Nile Expedition was an exceptionally trying one and that a great deal of heavy work and responsibility fell to the lot of the medical services. We can only trust that this fact will not be forgotten when the honours and rewards for the late campaign come to be awarded. The following is the list of medical officers mentioned in Sir H. Kitchener's despatch:—Medical Staff: Surgeon-Lieutenant-Colonel J. Gallwey, M.D., Principal Medical Officer; Surgeon-Major G. D. Hunter, Senior Medical Officer; Surgeon-Captain R. H. Penton, Medical Staff; Surgeon-Captain H. E. H. Smith, Medical Staff; Surgeon-Captain C. S. Spong, Medical Staff; Surgeon-Captain H. N. Dunn, M.B. Dub., Medical Staff; and Surgeon-Captain J. E. Trask, Medical Staff (since dead). It seems to be considered probable, according to telegraphic and other statements that have appeared in the press, that arrangements may be made for a subsequent advance to Khartoum, but this can only be a matter for conjecture at the present time, for nothing is absolutely known as to the intentions of the British and Egyptian Governments in this respect.

SELF-PROPELLED CARRIAGES.

IN a few days London will no doubt witness an important innovation with regard to its vehicular traffic. As our readers are probably aware, Nov. 14th is the date on which the Locomotives on Highways Act, 1896, will come into force, and motor carriages propelled by the agencies of both oil and electricity will have an opportunity of practically showing what they can do. Perhaps one of the most important immediate effects of this new Act will be the introduction of a new line of omnibuses, and if the excellent results of the trial trips which have already been made should be borne out when they are practically tested, not a little benefit is likely to result to Londoners from the points of view of convenience and health. With these aspects of the question we propose to deal later. In the meantime it may suffice to give a few particulars with regard to the new vehicles. In appearance they somewhat resemble the ordinary omnibus, though they are built upon a tramcar model; a special feature of the cars will be the pneumatic or air wheels capable of carrying one and a half tons per wheel, and the introduction of an air cushion or buffer which will, it is claimed, practically entirely do away with vibration. The cost of running the omnibus will be under 2½*d.* a mile. As an example of the way in which the comfort of the passengers has been studied in the construction of the vehicles it may be mentioned that each passenger will have four inches more seating room than he at present obtains in ordinary omnibuses. We understand that Messrs. Offord and Sons of Gloucester-road are providing for Mr. W. J. Lawson an open landau to be driven in the Lord Mayor's Show on Monday next by motor power.

THE ARCHBISHOP-DESIGNATE OF CANTERBURY AND TEMPERANCE LEGISLATION.

THE well-merited nomination of the Bishop of London to the Primacy of All England has excited much interest. His high academic history, his strong character, his very efficient work at Rugby and in the Bishoprics of Exeter and London, his advanced age, and last, but not least, his very pronounced teetotalism, constitute a remarkable group of qualities. It may safely be said that two subjects on which the Archbishop-designate will be most anxious to secure the advance of public opinion will be those of education, primary and secondary, and the duty of the State in the way of promoting national temperance. His mere personal example and his stern eloquence will impress society with the possibility of living long and working hard on water, or rather on tea of which he is said to be the greatest drinker since Dr. Johnson. He may even have it in his power to further legislation for the abatement of drunkenness, but it will not be in the way of prohibition or violent suppression of the trade. Lord Salisbury gave him no encouragement to expect legislation of that sort. Dr. Temple will immensely increase the chance of doing good of this kind if he does it in a less drastic way and if he will support measures consistent rather with the medical than with the clerical view of alcohol. He will have the whole medical profession with him in any well-considered measures for abating drunkenness, for saving habitual drunkards, for diminishing the number of public-houses and curtailing the hours during which their trade is carried on, and for punishing all who abet drunkenness in others. Total abstinence—though compatible with wonderful health and longevity in individuals—for a nation like ours is a counsel of perfection. The part of a broad ecclesiastic who wishes to do the greatest amount of good in the shortest time is to recognise this and to endeavour to reduce by all means the public and private consumption of alcohol to a *minimum*. We can

assure Dr. Temple that the medical profession is unanimous in thinking that the existing consumption of alcohol is fraught with danger to health in subtle ways which do not appear in the Registrar-General's returns and which are fostered both by our bloated public-house system and by grocers' licences.

STARVATION AT HOME AND ABROAD.

A PARLIAMENTARY paper has just been issued dealing with the deaths which occurred from starvation in the county of London for 1895. They number seventy-one in all, being an increase over the number in 1894 of thirty-two. In twenty-eight cases out of the seventy-one no application of any sort for relief seems to have been made, and in others admission to the infirmary or workhouse was offered and refused. This is a sad commentary on the working of the Poor-law. It is always the most respectable and deserving of the poor who prefer to suffer and die in solitude. It is, of course, impossible to bring back the old system of charitable doles so common in mediæval times; but surely something might be done to remove the stigma of shame which the poor attach to anything connected with parish relief. From India come reports of sore famine, so bad, indeed, that a case of cannibalism was recently reported which recalls the horrors of the siege of Jerusalem, a coolie and his wife having eaten their child. Relief works have been started, and the authorities appear to have good hopes that the distress will be tided over.

STREET NOISES.

LAST April a gentleman named Shields gave an organ-grinder into custody because he refused—as organ-grinders generally do—to cease playing outside his residence. Mr. Plowden, the magistrate, refused to convict because Mr. Shields had not given the organ-grinder a reason. Last week an appeal from this decision came on in the Court of Queen's Bench, and their lordships dismissed the appeal, being reported as saying "it was impossible for an organ-grinder to know whether he ought to cease playing if he were not informed of the reason for such a demand being made upon him." We had thought it a legal canon never to give your reasons. It is perfectly absurd that any man who chooses to turn the handle of a piano-organ can annoy people at his leisure. We believe the only legal reasons are (1) sickness, and (2) interference with business. There ought to be a third added—i.e., that the "musician" is not wanted. While considering this subject we may mention that the Brighton stipendiary magistrate has fined a street musician, one of a troupe, £1 and costs for refusing to move on after having been requested to do so, first by the prosecutor's servant and then by the prosecutor himself. We hear nothing of any reasons, and these two decisions appear to us to be in opposition. A definite statement as to what the law really is would be welcome, and if at present reasons must be given our legislators had better follow the example of Mr. Gilbert's Lord Chancellor and insert a "not." A correspondent of the *Times* draws attention to a fact which we commented on some little time ago[1]—viz., the powerlessness, according to themselves, of the various authorities in London to check the nuisance of the perpetual yelling of newspaper and other hawkers. The police say they can do nothing unless a hawker is given into custody; the vestries refer complainants to the police; and the County Council say they can do nothing; because they have not control of the police *bien entendu*. As to this latter question we fancy that if the Council were to pass a by-law—and we believe they are thinking of so doing—the police would carry it out. The noises caused by the yelling of newspaper sellers is simply unbearable, and in the residential districts, at any rate, is worst on Sundays. There can be no need to yell; the sellers of many evening papers never do so, and presumably make a living as well as those who howl like savages. It is not too much to ask from the Government—if the County Council, the police, and the vestries are all powerless—that something should be done. Why cannot Mr. Jacoby's Bill be passed?

[1] THE LANCET, Aug. 15th, 1896.

AN ACTION FOR FEES.

IN the Salford Court of Record on Oct. 27th Dr. Sinclair of Manchester sued Mr. J. M. Porter for £6 6*s*. in respect of treatment of his wife in 1895. Mrs. Porter consulted Dr. Sinclair for some ailment, and he advised preparatory treatment for a short time before the necessary operative procedure. Mrs. Porter therefore went into Dr. Stanley's private home, was seen once by Dr. Sinclair, and then underwent preparatory treatment by his assistant, Dr. Lea. At the end of a week Mrs. Porter again saw Dr. Sinclair, complained of his absence, and insisted on going home. She paid £3 3*s*. for expenses at the home, and no operation was performed. Mr. W. O. Hodges, counsel for the defendant, argued that he was not liable, as Dr. Sinclair had promised to attend Mrs. Porter but instead of so doing had handed her over to his assistant. Mr. Langdon, counsel for Dr. Sinclair, argued that he had only promised to do the operation and not necessarily to carry out the preparatory treatment. The jury found for the defendant. The case, we think, shows that an arrangement ought to be made beforehand as to what is and what is not expected of the medical man. Preparatory treatment often means a bath, and, according to Mr. Hodges's ingenious and successful plea, the medical man would be expected to give this himself. Doubtless in this case the preparation was more essentially medical, but we think the verdict sets a dangerous precedent.

GIN-SENG: THE PANACEA OF EASTERN ASIA.

DR. CHASTANG has called gin-seng the panacea of extreme Asia, and adds that as a universal remedy it is esteemed far above powdered tiger teeth, the scrapings of young deer horns, or even broth made from dog's flesh. The famous nostrum consists of the root of panax gin-seng, belonging to the natural order Araliacea, a plant indigenous to China and Japan, but chiefly occurring in Corea and Manchuria. When full grown it stands from a foot to a foot and a half high, each stem supporting a single palmate leaf. The flower is purple-coloured and in summer is replaced by brilliant red berries. The roots are gathered at the commencement of winter, and after maceration in cold water for three days are placed in covered vessels which are suspended over fires until the contents become hard, resinous, and translucid. The drug then appears in the form of brittle rods, often forked or many-tailed, about the thickness of the little finger and from two to four inches in length. The taste is sweetish and glutinous, recalling, in spite of slight bitterness, that of liquorice. The wild plant is the most highly valued, but it is extremely rare, being worth more than its weight in gold. According to the *Chinese Times*, ten large sticks of gin-seng and eight of medium size, weighing collectively nine and one-fifth ounces, fetched, including duty, the large sum of 1707 taels (about £340). Gin-seng culture in Corea is exclusively in the hands of a few state farmers and is most carefully supervised. The fields are surrounded by lofty barriers, whilst in each a watchman, perched on a platform, keeps guard night and day. The seeds are set in ridges bordered with slates and about a foot high, the tender shoots being protected from sun or storm by sheds of thatch or coarse cloth.

The ridges are disposed in long parallel rows with just enough space between for a man to walk. During the first year or two the seedlings are frequently transplanted. They do not attain to maturity until about the fifth year, and as a rule are not culled before the sixth or seventh. The leaves are said to possess emetic and expectorant properties, but the roots alone are employed medicinally, being prescribed as a tonic in every disease that is attended by debility. It is as an aphrodisiac, however, that gin-seng is in greatest request throughout the whole of the Orient. It is taken in the form of an extract or as a decoction, the latter mode being generally preferred. The vessel used in the process somewhat resembles a glue pot, having an inner and an outer compartment, both containing water. The gin-seng having been placed in the first a hollow cover filled with rice and water is applied and the whole exposed to a brisk fire. As soon as the rice is cooked the decoction is adjudged fit for use. It is usually taken in the morning (fasting) and at bedtime. From three to five grammes of the root constitute a daily dose, and the exhibition may be continued for a week or more. Gin-seng has several times been introduced into Europe, but it never obtained any vogue worth mentioning. The faith of the Asiatic in its manifold virtues is nevertheless so unshakeable that perhaps a further trial, especially of the wild variety, might be worth while.

A CONFERENCE OF PLUMBERS.

A CONFERENCE of Plumbers and Sanitary Authorities of South Wales and the South and West of England was held at Cardiff on Oct. 31st and was attended by representatives from Bristol, Southampton, Cheltenham, Bath, Burnham, Plymouth, Devonport, and other towns in Devon, Cornwall, South Hants, and South Wales. An address on Public Health in relation to the Plumbers' Registration Movement was delivered by Dr. Davies, medical officer of health of Bristol, who declared that public health could be best served by the appointment of men as sanitary inspectors who were practically qualified in plumbing. Mr. Edwin Seward, Fellow of the Royal Institute of British Architects, in a paper on the Architect in relation to the Plumbers' Registration Movement, recommended that a clause should be inserted in building contracts authorising architects to give out plumbing work separately to registered plumbers. Mr. W. H. Bishop, representative of the Master and Court of the Worshipful Company of Plumbers, delivered an address on the Plumbers' Registration Bill, its Objects and Chief Provisions, and its Position in Parliament, fully explaining the provisions of the Bill and the progress of the registration movement, to which the support of one-third of the plumbers of the United Kingdom has now been given. In the course of the proceedings medals and certificates granted by the Company of Plumbers were presented by Alderman David Jones, Duputy-Mayor, to the successful students in the recent competitions in plumbers' work, open to Wales and Monmouthshire and held at the Cardiff Exhibition, which has just closed.

COMBINED PROTOZOAN AND BACTERIAL INFECTION.

THE recent literature upon malarial infections in human beings contains a few instances of associated protozoan and of mixed protozoan and bacterial infections. Among the associated protozoan infections may be included cases of multiple malarial infections in which an individual may be infected at the same time with different groups or generations of the same organisms or of organisms of different types, and the rare co-existence of malarial and other protozoan infections such as amœbic dysentery. A case of considerable interest is reported by Dr. Simon Flexner in the Bulletin of the Johns Hopkins Hospital, vol. vii., Nos. 66–67. The case obtains this interest in part from the unusual character of the infection and in part from the extent, character, and consequences of the intestinal lesions. The clinical features of the case are fully reported. The patient was a Pole aged twenty-nine years. His illness began with diarrhœa, which rapidly assumed a severe character. The dejecta contained many motile amœbæ, having the characteristic appearances of the amœba coli. Examination of the blood showed hyaline bodies and crescentic and ovoid pigmented forms of the malarial parasite. At the necropsy the omentum covering the intestines presented an opaque appearance and was covered with a sticky exudate which also glued together the loops of the small intestine. The appendix vermiformis was enlarged and inflamed and bent upon itself, and when cut open presented areas of necrotic tissue. On opening the large intestine the entire mucous membrane was found in a frayed and sloughing condition, opaque, everywhere infiltrated with gelatinous pus, and evidently necrotic. Amid this general necrosis and sloughing more circumscribed ulcerations existed, some of which seemed to reach to the peritoneal coat. The spleen was enlarged. In consistence it was almost diffluent. The liver exhibited on section small greyish white nodules which varied in size from that of a pin-point to that of a hemp seed. The exudates were examined for amœbæ, and for this purpose pus from the peritoneal cavity, from the intestinal contents, and from the liver abscesses was employed. The most painstaking search failed to reveal amœbæ in the pus from the peritoneal cavity, while, on the other hand, many typical living and moving amœbæ were discovered in the pus from the ulcers in the large intestine and the intestinal contents and a smaller number in the contents of the liver abscesses. The peritoneal exudate was then examined for bacteria, and myriads of capsulated diplococci resembling the micrococcus lanceolatus were revealed. The contents of the liver abscesses, stained in the same manner, failed to show any bacteria whatever. The microscopical examination of the abscess contents indicated that fewer pus cells and more necrotic and disintegrating liver cells composed these than are found in ordinary abscesses, thus recalling the fact pointed out by Councilman and Lafleur that true suppuration is not caused by the amœba dysenteriæ.

EGYPT AND THE SOUDAN.

THINGS seem to be settling down in the most satisfactory way in the Soudan. The sheikhs of the Hawayiyeh, Sarawah, and Kababish tribes have tendered their submission to the Government, by which a large extent of the desert between Dongola, Berber, and Omdurman will be placed in the hands of Arabs friendly to the Government. The Indian contingent are returning to India to be replaced at Suakim by Egyptian troops. We learn that there have been between thirty and forty cases of enteric fever in the North Staffordshire Regiment since their return to Cairo from the Upper Nile after their late arduous campaign in the Soudan, and that seven have proved fatal. We are glad to hear that the prognostications in regard to the disappearance of cholera in Egypt have been completely verified. There is no cholera there now, and there will in all probability be as many visitors to that country during the present winter as heretofore. Egypt, notwithstanding the insanitary condition of its cities, has a delightfully dry climate and is altogether a most interesting country for the traveller and the invalid in search of health. There is ample and excellent hotel accommodation and plenty of gaiety at Cairo, but that is no reason for people in delicate health remaining there. With the desert air of the pyramids, Helouan, Luxor, and the Nile at command, the invalid and visitor will be hard to please if he cannot find a

salubrious and interesting site. It is necessary to bear in mind, however, that heat and cold are, after all, relative terms and that there is a rapid fall of temperature at sundown. Invalids and others with a predisposition to pulmonary disease are tempted by the sunshine and pleasant warm dry atmosphere to sit or remain out too long, unprotected by sufficient clothing, instead of returning to their hotels and boarding-houses before sunset.

SANITATION AND PIGEON-KEEPING.

A SOMEWHAT important matter recently came before the Cockermouth Rural District Council. The medical officer of health reported to the council that the number of "homing" pigeons kept in the mining village of Siddick constituted a serious danger to health. The colliers had implored him not to order the removal of the pigeons, as they were worth some £200, and in addition the removal of the pigeons would mean the loss of good sport. Eventually the matter was left to the colliery company as owners of the cottages, the medical officer saying that he thought fewer pigeons should be kept and more attention paid to the cleanliness of the cotes. We hope the miners will act upon this suggestion. Everyone who has kept pigeons knows perfectly well what a horrible stench arises if the cotes are not kept clean and how detrimental this is to the birds themselves as well as to the health of the community. Pigeon-flying is so harmless and pretty a form of sport that it would be a thousand pities, for want of a little care, to do away with it.

EPSOM COLLEGE.

ON Thursday, Oct. 29th, the Bishop of Winchester, visitor of the College, took part in the opening service of the new chancel of the chapel and preached an admirable sermon to the boys from Revelations iii. 5. This portion of a future complete building has been designed by Sir Arthur Blomfield and Sons and the proportions are beautiful. The additional accommodation requisite has been secured and the effect of the whole addition is impressive, but so long as the old part remains attached to the new no one who sees what has been done can fail to long for the completion of an entirely new chapel. At this service the new organ was also dedicated, and the Rev. Dr. Rowton, the College organist and second master, used it for the first time. The funds have been raised by the efforts of the school, both past and present, combining to render a tribute to Dr. Rowton's long service to the music of the school and to provide him with a worthier instrument. The new lower and junior school buildings for 100 boys now approaching completion will be opened for the admission of pupils after Easter next. The same architects have also designed this building, and the elevation as well as the internal arrangements met with the warm encomiums of the visitors present. After the service an organ recital was given in the chapel, and there was a large gathering of parents and friends from the neighbourhood and from a distance, who were afterwards received by the Headmaster at Wilson House, where refreshments were provided.

THE ETIOLOGY OF TRAUMATIC FEVER.

THE generally accepted hypothesis that traumatic or "aseptic" fever is due to free fibrin ferment circulating in the blood has several objections, and Schnitzler and Ewald, by a recent investigation,[1] have shown that it is in all probability incorrect. To begin with, fibrin ferment is proved by Köhler's experiments to be incapable of producing fever in animals. But apart from this there does not appear to be any ferment in the blood of patients suffering from traumatic fever. These observers examined the blood from two cases with temperatures of 100·4° and 102·2° F. suffering from attempts to reduce an old dislocation of the hip and rupture of the popliteal artery respectively, but could find no evidence of fibrin ferment. Their own explanation is that such injuries give rise to an increased absorption of nucleo-albumins and albumoses and is based on the following considerations. The quantity of alloxur-bodies in the urine is known to vary directly with the amount of nucleins absorbed. Both in animals and in men with fractures or dislocations the amount is often increased; and the source of the nuclein is to be found in the increased number of leucocytes present in the circulation under these circumstances. Again, albumoses form a considerable constituent of hæmatomata. Now both nucleins and albumoses brought into the circulation are capable of producing fever, so that all the necessary conditions are present. An interesting part of the instructive and suggestive article is the hypothesis concerning the lighting-up of tuberculous foci after injury or operation. Experimentally Schnitzler and Ewald found that albumoses (which are also present in Koch's tuberculin) brought into the circulation generally caused a reaction in the affected portions of tubercle-infected animals, and they imagine that the albumoses liberated from the blood after injury or operation may similarly cause a recrudescence in the old foci of tuberculous subjects without the necessity of actual transference of tubercle from one part to another.

[1] Archiv für Klinische Chirurgie, vol. liii., p. 530.

HÆMORRHAGIC PANCREATITIS.

HÆMORRHAGIC pancreatitis is a rare disease, but a considerable number of instances are now on record, in the large majority the diagnosis not having been made until after death, but a correct diagnosis has been occasionally made during life. The age at which the disease usually occurs is about forty-five years; some patients have been of advanced age. The youngest hitherto recorded appears to be aged twenty years, but in the *Canadian Practitioner* for September of this year an account is given of the disease in a boy aged nine months. The case is reported by Dr. A. McPhedran of Toronto. During the first three months of his life the child had had a good deal of colic; the motions often contained curds. The bowels always required some stimulus to excite them to act. The motions were soft and yellow. In the ninth month they became more liquid and contained a great many small, yellow, fatty-looking particles. On Nov. 13th, 1895, sudden profuse vomiting occurred. On the 15th he was better in the early part of the day, but later he vomited again profusely and was prostrate. In the evening he had a severe attack of colic lasting an hour, with tenderness over the epigastrium. Paregoric was given to relieve the pain and calomel followed by repeated doses of fluid magnesia to move the bowels, but without effect. He appeared to have no subsequent pain. The following morning (Nov. 16th) he was weak and listless. Attempts to give nourishment were followed by vomiting, and towards the evening he grew rapidly worse. All efforts to move the bowels failed. The abdomen was slightly distended, and examination of it revealed nothing unusual except in the region of the ascending colon, where there was an elongated mass about the size of the middle finger. It was firm, moved with respiration, and was dull on percussion. The resemblance of this sausage-like mass to that in intussusception, the failure to move the bowels even with strong purgatives, and the straining and vomiting seemed to render operation advisable as the only hope of giving relief. On opening the abdomen the mass was found to be an accessory lobe of the liver. The intestines were everywhere healthy and there was no exudation in the peritoneal cavity. Death occurred next morning. The probability of the illness being hæmorrhagic pancreatitis was suggested. This was confirmed by the necropsy.

The middle third of the pancreas and the immediate surroundings were found deeply infiltrated with blood, but neither the head nor the tail was affected. There was no extensive clot. All the other abdominal organs were healthy. As the necropsy was not performed until forty hours after death the pancreas had become so much disorganised by post-mortem change that nothing could be determined from the histological examination further than that the tissue was infiltrated with blood. Dr. McPhedran adds some interesting comments on the case and the disease in general, and has collected a valuable bibliography dealing with the subject.

THE ADELAIDE HOSPITAL.

WE hear from the Agent-General for South Australia that he has received the following telegram from the Government: "Adelaide Hospital crowded. Everything satisfactory. You can contradict rumour to the contrary." This telegram is dated Oct. 31st, 1896. It will be remembered that about the middle of September the four house surgeons unanimously resigned, and we very much doubt whether all difficulties have been smoothed away in the interval. As to the fact of the hospital being crowded that proves nothing. Any place where free medical advice is offered will always be crowded whether such advice be good, bad, or indifferent. We do not think that any medical man would be well advised to place his services at the disposal of the Government until he has received information from other than Government sources that all is well.

EXTRACTION OF TEETH AND FACIAL PARALYSIS.

IN the *Wiener Klinische Rundschau* a paper on this subject has been published by Dr. Frankl. Hochwart, in which he gives an account of six cases which he has observed.[1] In the first case the patient had had an attack of facial paralysis seven years before, and the second attack, which affected the same side, came on the day after the extraction of a tooth also on that side. In the next three cases complete facial paralysis came on a few days after extraction of teeth and without any other complication, and in these cases the paralysis was on the same side as the extraction. So it was in the sixth case, while in the fifth it was on the opposite side. Dr. Hochwart does not regard the actual extraction as the direct cause of the paralysis, but rather the condition of inflammation which renders extraction necessary or, at least, desirable; and he points out the fact that injury to a tooth may cause paralysis in anyone with a predisposition, as was the case in a young woman who suffered from a third attack of facial paralysis after the accidental breaking of an incisor. He also thinks that inflammation about the teeth may cause paralysis even if extraction has not been done.

A QUESTION OF ETHICS.

A STRANGE complaint has been referred by the Southampton County Borough Council to a special committee. It appears that a year or more ago a constable was laid up with varicose veins and an ulcerated leg. He was reported unfit for duty by one of the police surgeons and taken into the private hospital of a medical gentleman who is a member of the watch committee. After six weeks' detention and an operation he returned and reported himself as "cured." The first medical man's brother and another police surgeon saw him and he was given another chance. In September, whilst on duty, one of the many varicose veins gave way and he lost a deal of blood. He was seen by three police surgeons and certified to be no longer fit for police duty. However, the constable was taken to London to a consultant by his private medical man (the gentleman referred to), and the watch committee has accepted this consultant's certificate and reinstated the officer. Rather naturally, the three police surgeons object to their professional opinions being put on one side in this way. They say: "We enter our emphatic protest against a member of the watch committee going outside his duty and over-riding your duly appointed officers. Our influence with the members of the police force cannot but be weakened and a precedent established for any police officer to dispute our certificate." Further, the three signatories hope that the gentleman to whom they refer will retire from the sub-committee which is now considering the question of the salaries of police surgeons. Assuming that the facts are correct, there can be no doubt that the police surgeons have a very substantial grievance. A policeman suffering from varicose veins of some standing, with considerable hæmorrhage resulting from the giving way of one of these veins, is unquestionably unfit for further duty as a police constable. The medical gentleman who combined in his person the office of member of the watch committee, manager of a private hospital, and private medical attendant to the policeman in question should not have interposed in the matter.

[1] Neurologisches Centralblatt, p. 935.

CHARING-CROSS HOSPITAL STUDENTS' DINNER.

THE present and past students of Charing-cross Hospital Medical School are to be congratulated upon the success of their annual dinner, which was held in the Venetian Chamber of the Holborn Restaurant on Oct. 30th, when covers were laid for some 250 persons. The speeches were commendably brief and the enjoyment of the evening was enhanced by some ably rendered songs, the most appreciated of which was, perhaps, "Father O'Flynn" by Dr. Mott. Mr. James Cantlie presided and Sir Joseph Farrer was also present. Some additional interest was lent to the occasion by the presence of Sun Yat Sen, whose imprisonment at the Chinese Legation recently aroused the indignation of the country. In replying to a toast in which his name was referred to, Sun Yat Sen expressed his gratitude for the interest which had been taken in his welfare by the "officials of this country," and particularly acknowledged his indebtedness to two members of the medical profession, Mr. Cantlie and Dr. Manson.

THE FEE FOR CERTIFYING LUNATICS.

THE Lunacy Act allows a magistrate to call to his aid a registered medical practitioner for the purpose of certifying to a person being of unsound mind. The fee usually has been one guinea, excepting, perhaps, in some cases where boards of guardians have made an agreement with their officers to accept a smaller sum. We are strongly of opinion that no medical man should accept the responsibility of certifying to the insanity of a person for a smaller sum than one guinea, and that no medical officer to a union should contract to do the work for a less sum. An insurance company pays the medical man a fee of one guinea for examining and reporting on the life of a proposer. The work, no doubt, is onerous enough, but there is no responsibility attached to it. Who is willing to run the risk of a prosecution, to fill up a difficult certificate after a full examination of a patient, for less than the sum mentioned? Surely the appreciation of our services by magistrates and public bodies must be mean if a less fee be suggested, and the profession is unjust to itself should anyone be willing to accept less for his services. The risks of prosecution by means of an action at law are just the same in the case of a pauper lunatic as in that of a private one. We call the attention of the profession to this important subject owing to an attempt being made by several public bodies to reduce the fee, and it behoves the profession to be true to itself and resent such treatment. At

a recent meeting of the Prescot board of guardians the Widnes Relief Committee submitted the following resolution: "It having been suggested by several magistrates that the usual fee of one guinea paid to medical gentlemen for their services in lunacy cases was excessive, this committee suggests to the board the desirability of passing a resolution supporting the same, with a view to the sum of half a guinea being fixed upon as the general fee in such cases, and that the board's opinion and recommendation on the matter be communicated to the magistrates." This gave rise to some discussion, but the resolution was ultimately adopted with only two dissentients. Why not suggest that the medical man should do the work at the same price as the "great unpaid," and then they would share the honour? Surely it is time the profession rose in a body to resent such want of appreciation.

PUERPERAL NEURITIS.

IN a recent number of the *Münchner Medicinische Wochenschrift* Dr. George Köster relates the case of a woman aged twenty-five years, formerly always healthy, who fourteen days after a normal labour began to suffer from pain and weakness in the left arm. There was no preceding rise of temperature, but the upper arm soon wasted. There was tenderness on pressure over the radial and musculocutaneous nerves and some slight impairment of sensibility was noticed. There was the reaction of degeneration in the deltoid and biceps. The rest of the muscles were normal, but in the brachialis anticus, although at first the reaction was normal, after twelve weeks in that muscle also there were wasting and sluggish reaction. After eight months, in spite of daily treatment by massage, there was complete loss of reaction in the deltoid, biceps, and brachialis anticus. There was at first a patch of anæsthesia with a part at which there was hyperæsthesia, but this in time cleared up completely; but over the lower part of the deltoid another patch developed with complete anæsthesia, and simultaneously with the development of this there was a cessation in the spontaneous pains and there was no longer tenderness on pressure. The writer regards the condition as the result of toxins arising in connexion with the uterine condition after labour; but the case is unusual in the severity and permanence of the damage to the motor structures. Complete recovery, or at least much improvement, is the usual rule in such cases.

SLATIN PASHA'S ESCAPE: ETHER PILLS.

THE captivity and escape of Slatin Pasha form a record of adventure as *bizarre* as anything presented in fiction. Rudolph Slatin, an Austrian, at one time Governor of Darfur, spent twelve years of miserable and humiliating servitude in the Soudan, sometimes heavily ironed, often in want of food, and in daily fear of his life at the hands of a capricious master. After the Mahdi's death Slatin fell into the power of his successor, the present Khalifa, a cruel tyrant compared with whom the Mahdi was a man of humane instincts. The prisoner bore with stoical fortitude the ordeal to which an unkind fate submitted him and never lost hope of ultimate deliverance. Such a terrible experience would have ruined most men physically and mentally, but apparently Slatin is not much the worse for his trials, for in a short time after escaping he was on active military service with English officers on the Egyptian frontier. It is impossible not to admire the valour and constancy of the Soudanese warrior tribes, Arab and Negroid, swayed though they are by fanaticism and ignorance. With no commissariat beyond a scanty supply of dates, and trusting mainly to sword and spear, they are ever ready to undertake the most desperate military enterprise. The same strain of fighting Arab blood which sorely tried the mettle of the Crusaders is found in the province. Suits of chain armour of European make are worn by the horsemen, and there is little, if any, doubt that these shirts of mail were taken from slain or captive Crusaders 600 years ago, eventually finding their way from Syria and Egypt to the Soudan. The Mahdist soldiery is kept in order by an iron discipline, the most trivial breaches of regulation being punished with appalling severity. Tobacco-smoking and the drinking of a native liquor called marissa are prohibited, the punishment for a first offence being a merciless flogging and for the second amputation of the right hand and left foot, the stumps being thrust into boiling oil. Not a groan or sound is made by the wretched victims during the process of dismemberment. Slatin Pasha observed the almost universal prevalence of syphilis in the country, confirming in this particular what had been previously recorded by the Austrian priest Ohrwalder, who escaped from Omdurman after enduring a captivity of ten years. According to the latter, who published his experiences a few years back, Soudanese who have escaped the ravages of syphilis are considered milksops and looked upon with some degree of contempt. Iodide of potassium in large doses is used as a remedy for the disease, but the supply of the drug would appear to be quite inadequate. They also physic themselves largely and often fatally with native drugs of whose properties they know nothing. Malaria, dysentery, guinea-worm, and leprosy are common. Slatin after weary years succeeded in establishing communication with Cairo and made plans of escape, some of which came to nought. At last, however, with the aid of several Arabs who had been heavily bribed by his friends (one man received £1000), a relay of camels was provided and he made a start for freedom one dark night. From Vienna he had received, in his own words, "some ether pills which are very strengthening on a journey and ward off sleep. They had been prepared by Professor Ottaker Chiara and reached me safely. They were in a small bottle which I buried carefully in the ground." Probably the "ether pills" were capsules containing some of the liquid. The first 130 miles of his perilous ride were traversed swiftly without a halt, and after many exciting incidents and a narrow escape from a Dervish patrol he fortunately reached the frontier and safety. Many parts of the Soudan are exceedingly fertile, with abundance of water, but scarcely suitable for European settlers. When the reign of the despot who now rules the country has been brought to an end it is believed that a very prosperous future awaits the Soudan, with its hordes of brave but misguided people.

SERUM-DIAGNOSIS OF TYPHOID FEVER.

THE Board of Health of the province of Quebec is evidently determined not to be behind the times in bacteriological matters. It has issued a circular to members of the medical profession in the province (written in English and French) calling attention to the discoveries of Pfeiffer and Widal on the effect produced upon cultures of typhoid bacilli by the blood serum of patients suffering from the fever. The change which the admixture of such serum (and no other) produces consists in the almost immediate arrest of the movements of the bacilli and their agglutination in masses. Dr. Wyatt Johnston, bacteriologist of the Quebec Board of Health, has extended the original discovery by finding that the same reaction is to be obtained when a dried drop of blood is used after this has been moistened with water. It is accordingly proposed to test the efficacy of the method on a large scale, so as to ascertain (*a*) the best means of ensuring its success, (*b*) the earliest period in a case of typhoid fever at which it can be obtained, (*c*) the length of time that it persists after convalescence, and (*d*) the existence of any relation between the intensity of the

reaction with the test and the course of the disease. At the same time it is hoped to throw light upon certain obscure febrile conditions. With this object a printed envelope is issued under cover giving directions for procuring the drop of blood in such a way as to avoid its contamination and enclosing a piece of sterilised paper upon which the drop is to be received. Certain facts about the case are to be stated at the same time and the physician will receive the report of the examination on the following day. No doubt in this manner a large number of specimens will be secured, but considering the wide scope for error in an investigation conducted on so large a scale we cannot but think that the efficacy of the plan could be far more satisfactorily and thoroughly demonstrated in the wards of a fever hospital.

SMALL-POX IN MADRID.

FOLLOWING our own experience of the late Gloucester epidemic in this country there is an illustration—an object-lesson—going on in Madrid at the present time of the results of small-pox in a population where vaccination has been neglected. There is no Spanish law for the enforcement of this operation. According to the special correspondent of the *Standard* an epidemic of small-pox is now, and has been for some months, prevailing in Madrid. The deaths from the disease have risen from 86 in July and 142 in August to 225 in October up to the 25th of that month. About 82 per cent. of the deaths from small-pox are of children aged under eighteen months, almost all of whom had never been vaccinated. The hospital accommodation for the disease has been largely increased and vaccination and re-vaccination have been extensively carried out with excellent results, especially in the schools and garrisons, where only a few mild cases have been reported.

THE MAYOR OF LEAMINGTON.

THE mace is perhaps the most conspicuous outward and visible sign of corporate dignity, and in the fashionable borough of Leamington this showy emblem will henceforth appear on all occasions which require it to be displayed. For this important addition to its municipal insignia Leamington is indebted to the liberality and public spirit of Dr. T. W. Thursfield, the mayor, who has signalised the completion of his second year of mayoralty in a manner which cannot but recommend itself to all classes of citizens. According to the *Leamington County Chronicle*, "the head of the mace combines the form of the Royal crown of the Carlovingian period with a restrained and harmonious vase-head or bowl. This, with the Royal fillet, surmounted by the cross pattées and fleur-de-lis, completes the decorative head, as typifying the delegated authority of the Sovereign to the mayor for the time being. On the centre of the obverse of the bowl are given the arms, crest, and motto of the borough in full heraldic blazon, surmounted by a forget-me-not wreath." The mace is made of sterling silver richly gilt and bears several inscriptions, English and Latin; it was formally handed over to the corporation by the donor on Oct. 23rd. A gift of this kind is well chosen from all points of view, for not only is the artistic work of the silversmith pleasing to the eye, but the most obdurate utilitarian must admit that a judicious admixture of picturesque and time-honoured ceremonial is an agreeable relief to the prosaic routine of public business, and is, moreover, not without effect as a restraining agency when the energy of heated partisans tends to become too exuberant. From the mayor's parlour to the free library the transition may appear to some minds as a sort of anti-climax, but at Leamington the last-mentioned useful institution receives a due share of the mayor's attention and is visited by him as a part of his duties; it is well stocked with books, well patronised by readers, and managed by a committee who are desirous of still further extending its resources, especially by the acquisition of standard works on local history, topography, and antiquities.

THE HEALTH OF SIR WILLIAM MACCORMAC.

SIR WILLIAM MACCORMAC still continues ill, and his general condition has not shown any marked change for the better during the past week. The temperature keeps above normal, appetite does not return, and the patient remains very weak. At the same time there has been further improvement of the condition of the lung which encourages the hope that convalescence may soon set in.

THE subjects of the Brown Lectures to be delivered at the University of London, Burlington-gardens, by Dr. J. Rose Bradford, Professor-Superintendent of the Brown Institution, will be as follows: The Work of the Brown Institution, with special reference to Rabies, at 5 P.M. on Nov. 3rd and 10th, and Observations on the Pathology of the Kidneys at 5 P.M. on Nov. 17th and 24th. A demonstration will be given at 5 P.M. on Nov. 25th in the Laboratory of the Brown Institution, Wandsworth-road, Vauxhall.

THE *Citizen* announces that its next issue will contain an interview with the Lord Mayor-elect, from which it will appear that Alderman Faudel Phillips proposes to signalise his mayoralty and the sixtieth anniversary of Her Majesty's reign by raising a national subscription to free the public hospitals from debt. It is estimated that the sum required for this excellent purpose is from £800,000 to £1,000,000.

THE autumn dinner of the Irish Graduates' Association will take place at the Café Monico on Wednesday, Nov. 11th. The President, Sir Richard Quain, Bart., F.R.S., will take the chair.

IT is announced that Dr. Conan Doyle will take the chair on Wednesday next at the dinner of the Edinburgh University Club.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE quarterly Comitia of the Fellows of the Royal College of Physicians of London was held on the 29th ult., the President, Dr. S. WILKS, being in the chair. At the commencement of the proceedings the President read a letter he had received from Lady Russell Reynolds thanking the College for its vote of condolence passed at the last meeting.

The PRESIDENT announced that Sir W. Roberts had accepted the office of Harveian Orator for 1897.

The following gentlemen were admitted Members of the College: J. L. Bunch, M.D. Lond., J. S. Collier, M.B. Lond., W. M. Davidson, M.B. Lond., T. Fisher, M.D. Lond., W. J. Horne, M.A., M.B. Camb., E. J. Maclean, M.D. Edin., H. J. M. Playfair, M.D. Lond., P. D. Turner, M.D. Lond., and J. K. Warry, M.D. Lond.

Licences were granted to 137 candidates who had passed he recent examination.

A communication was read from the Colonial Office enclosing reports on the Hospitals of St. Lucia for 1895, in which attention was called especially to an account by Dr. Golgi of the successful treatment of tropical anæmia (ankylostomiasis) by thymol, together with a letter from the medical officer to the Colonial Office, Dr. Gage Brown, pointing out the importance of the same and advising its publication. Another communication from the Colonial Office,

forwarding a report on the outbreak of bubonic plague at Hong-Kong (1193 cases with 1088 deaths), was also read.

A communication was read from Mr. Trimmer reporting the proceedings of the Council of the Royal College of Surgeons of England.

A letter was read from Dr. G. C. Henderson of Jamaica resigning his Membership, as he was about to enter into partnership.

A communication was read from the Civil Rights Defence Committee inviting the College to instruct its representative on the General Medical Council to support a proposal to amend the Medical Act in such a way as to safeguard the profession from proceedings such as had occurred in the case of Mr. R. B Anderson. The College decided to leave its representative free to take such action as he deemed fit should the question come before the General Medical Council.

A report was received from Dr. G. H. Philipson and Dr. T. Oliver, recounting the proceedings of the Congress of the Sanitary Institute at Newcastle, which they had attended as delegates of the College.

Dr. Norman Moore was elected a member of the Council in the place of Dr. Payne, appointed Censor.

A report was received from the Jenks Scholarship Committee announcing that the fourth scholarship had been awarded to Mr. A. Whitehead Smith, lately of Epsom College.

A report was read from the Bisset-Hawkins Memorial Committee, and its recommendation adopted, that a triennial gold medal should be established to be awarded to a member of the medical profession who shall have distinguished himself during the preceding ten years by work in sanitary science. It during proposed that the first award should be made in 1899.

Dr. FAVY moved: "That it be referred to a committee to consider and report to the College on the desirability of including the subject of bacteriology in the course of study and examination for the licence of the College." He said that it was necessary to revise the curriculum from time to time to keep pace with the growth of knowledge; that bacteriology had rapidly assumed a very important position in medicine; and that it was as important for the medical practitioner to be acquainted with its methods as for the diplomate in public health, in whose curriculum the subject is included. He also pointed to the fact that the subject was prominently mentioned in the curriculum of the Veterinary College. He merely asked that the matter should be entertained and carefully considered by a committee.

Dr. CHURCH (Senior Censor) seconded the resolution on the ground that such an inquiry would be of service in gathering opinion on the question, which had already been discussed at the General Medical Council.

Dr. LUFF hoped that the committee would consult the examiners for the diploma of public health as to the difficulties of carrying out an examination in bacteriology.

Sir DYCE DUCKWORTH deprecated adding to the burdens of the student a subject which was declared by one engaged in it to be impossible to adequately impart to the average student. He pointed out that even in the case of candidates for the Diploma of Public Health only an elementary knowledge was required, and these were men who had already passed through the medical curriculum. Was bacteriology really of solid use to the average practitioner? Could time be found for its full instruction? He thought that for all ordinary work it was sufficiently taught at present.

Dr. BRIDGES urged the advantage of practitioners having such an amount of knowledge as would enable them to recognise diphtheria in its earliest stages.

Dr. S. WEST opposed the reference of the subject to a committee, doubting its desirability, seeing that the curriculum was already overburdened with subjects. It would not be possible to examine in it properly, and the fact that with the present curriculum the rejections amount to 40 per cent. shows that students are either not properly taught or that the system is faulty. The general complaint is that the newly qualified man is less fitted to practise than he used to be. Ever since the fifth year had been added to the curriculum additional subjects were being proposed to be added, and the proposal to add bacteriology was another instance of this. It was a subject for research—a practical subject, which required much time to be devoted to it, time which the student could not afford. Moreover, the very nature of the study was such that reliance could only be placed on the observations of those who had devoted themselves to it.

On the motion of Sir W. ROBERTS, seconded by Dr. HERON, the debate was adjourned.

ELECTION OF DIRECT REPRESENTATIVES TO THE GENERAL MEDICAL COUNCIL.

MR. RIVINGTON'S CANDIDATURE.

THE following letter has been addressed to the President of each branch of the British Medical Association in England and Wales by Mr. Holmes, the chairman of Mr. Rivington's committee:—

"DEAR MR. PRESIDENT,—In forwarding, at the request of my committee, the enclosed appeal to the electorate, which is omitted this week from the Journal of the Association, I am desired to ask the earnest attention of the members of your branch to the principles and policy therein contained.

"On all the objects to be gained we believe we are at one with the great majority of practitioners—the amendment of the Medical Acts, the increase of Direct Representatives, the single portal system, the restriction and suppression of all forms of unqualified and unlicensed practice and of hospital abuse, and others which are very ably and lucidly treated in Mr. Rivington's address (*vide* copy appended and also THE LANCET and *British Medical Journal*, Oct. 10th, 1896).

"The policy we commend as the best, indeed the sole, immediately practicable means of attaining these objects—viz., persuasion in the Council with the support and influence of the corporations through their representatives—requires, I am sure you will agree, not only the presence on the Council of direct representatives of the highest personal qualifications, but the active and sustained employment of all means at our disposal, and especially of the voluntary organisations of the profession, of which the Association is the greatest, to assist your representatives by bringing home to the corporations to which we each belong the propriety and advantage of using their influence in the interest of their constituents to support necessary measures on the Council, as is now being done by the Royal College of Surgeons of England (*vide* Annual Report, 1896, page 10), by the Worshipful Society of Apothecaries of London, and Faculty of Physicians and Surgeons, Glasgow.

"As such an opportunity as the present of carrying this policy into effect and advancing to the attainment of our objects will not recur for the long period of five years, and especially as full information on the proceedings of candidates and committees and full opportunity of discussing and considering important principles may not be afforded by the Journal, my committee trusts that if no meetings of your branch or district otherwise take place, you will be able to convene special meetings to consider these matters some time before the electors are called on to record their votes.

"I am, dear Mr. President, yours very truly,

"T. HOLMES,

"Chairman of Mr. Rivington's Committee.

"Committee-room, 95, Wimpole-street, W.,

"Nov. 2nd, 1896."

THE first public meeting of Mr. Rivington's supporters was held on Nov. 3rd at the rooms of the Medical Society of London, Mr. TIMOTHY HOLMES being in the chair.

The CHAIRMAN briefly introduced Mr. Rivington as too well known to need any introduction.

Mr. RIVINGTON, who was very warmly received and often enthusiastically applauded, gave a full and lucid exposition of the views and policy of the Association of Fellows and Society of Members in support of which he had been invited to come forward. He attached the greatest importance to the two main principles (1) that every representative of a licensing body on the General Medical Council should effectively represent not merely the governing council of that body but the interests of its Graduates, Licentiates, Fellows, or Members; and (2) that it is the duty of the General Medical Council to maintain the rights guaranteed to all medical practitioners under the Medical Acts. To fully establish the first principle corporate reform was essential, and when he spoke of corporate reform he referred primarily to reform of the Royal College of Surgeons of England, and reform of the College meant that the 16,000 Members should have a voice in the management and be represented on the Council. The College of Surgeons being from the number of its constituents the most important of all the corporations reform of that College was the key of the whole position. When once the Members had obtained representation and their views were reflected in the General Medical Council through the representative of the College other corporations would follow suit and the General Medical Council would be brought into harmony with the wants and wishes of the profession, for every representative of a corporation would be a direct or indirect representative of a section of the profession. Having touched on the second principle as exemplified in the case of Mr. R. B. Anderson, whose indefatigable zeal as a secretary he wished to acknowledge, Mr. Rivington said that the other objects to be gained and approved by his committee and himself were the amendment

of the Medical Acts, the increase of direct representatives, the single portal system, and the suppression of all forms of unqualified and unlicensed practice and of hospital abuse. It would be a grievous blow to the efforts of the profession, and especially of the general practitioners of the country, who suffered so much from the encroachments of unqualified persons and charitable institutions, if the proposed registration of imperfectly trained midwives were to be carried into effect. Adequate protection to child-bearing women could only be secured by the provision of fully qualified practitioners, male or female, as might be desired, for the poorer classes, who were as entitled as the rich to the best medical aid; and if it cost the country £300,000 the money would be well laid out. He was at a disadvantage in having come late into the field, but still more so in not being now a general practitioner. He should not have come forward but for the invitation of a large body of general practitioners and if he had not had the conviction that, if he were supported adequately by the profession, he might advance its interests. He was entirely in the hands of his professional brethren to go on or to retire as might seem best to them.

[Mr. Rivington concluded by referring in modest terms to his work as a reformer at the College of Surgeons, carried on vigorously and with great self-sacrifice—facts thoroughly well known to the profession—and he expressed his belief that the efforts of the members to obtain representation on the Council must ultimately be crowned with success.]

Mr. TIMOTHY HOLMES then moved a resolution affirming the principles and policy on which Mr. Rivington had been invited to come forward as a candidate at this election. The College of Surgeons he agreed to be the key of medical reform. It had been said, he thought foolishly, that he was an enemy of the College because he was an advocate of reform, but in all that he had said or done he had been actuated by what he felt to be the highest regard for its welfare. He had served in almost every office in the College save that of President, and had been associated with the movement for reform during the whole of a long life. That movement had steadily advanced. At first those who advocated it were regarded as little better than so many lunatics, but they had gradually gained more and more attention and the movement for reform of the College would inevitably proceed to its only possible and logical conclusion. "During my whole professional career," said Mr. Holmes, "I have desired and striven for a reform of the anomaly by which all authority in the College is vested in twenty-four Fellows, and there is nothing that before the close of a long life could afford me greater satisfaction than to see it successfully effected. It is this hope chiefly that makes me an earnest supporter of Mr. Rivington's candidature, and it is these principles expressed in this resolution that I desire to affirm. I beg to move—

"That this meeting adopts the principles and supports the policy of the Association of Fellows and Society of Members of the Royal College of Surgeons of England as the most direct and practical policy yet placed before the profession in relation to the present election of Direct Representatives on General Medical Council."

Dr. THOMAS MORTON seconded the resolution, which was carried unanimously.

Mr. JOSEPH SMITH moved a resolution, pledging the meeting to support Mr. Rivington's candidature, in the following words:—

"That, though not a general practitioner, Mr. Rivington's consistent support for thirty years of the best interests of the profession, without regard to such distinctions, entitles him to the confidence of the whole profession, also without regard to such distinctions which are not recognised by law in relation to the election of Direct Representatives on the General Medical Council, and would, if regarded, improperly fetter the discretion of electors in selecting the representatives in whom they most confide and who are most likely to advance those interests and promote their welfare, and pledges itself on all these grounds to support Mr. Rivington's candidature."

Mr. W. G. DICKINSON seconded the resolution, which was carried unanimously.

With a vote of thanks to the Chairman the meeting terminated.

DR. ALDERSON'S CANDIDATURE.

A MEETING of the supporters of Dr. F. H. Alderson in his candidature as a direct representative of general practitioners on the General Medical Council was held at 11, Avonmore-road, West Kensington, on Thursday, Oct. 29th. Mr. James Savage was voted to the chair. The chairman read letters of regret at their inability to be present from several supporters living at a distance as well as many further promises of votes and help. The candidate addressed the meeting, dwelling chiefly on the midwifery question and its bearing on the future of the general practitioner. The discussion which followed was taken part in by Mr. Brooks, Dr. Barkwell, and the hon. secretaries. A vote of thanks to Mr. Savage for the use of his room ended the meeting.

THE CANDIDATURE OF MR. G. BROWN, MR. JACKSON, AND DR. RENTOUL.

On the 22nd and 23rd ult. three meetings convened by the Council of the Incorporated Medical Practitioners' Association were held in London in favour of the candidature of Mr. George Brown, Mr. George Jackson, and Dr. Rentoul, the three candidates nominated by the above association for seats on the General Medical Council. The first meeting was held at the Athenæum, Camden-road, Holloway, on the afternoon of the 22nd ult., when Dr. Hugh Woods presided. On the evening of the same day a meeting was held at St. Martin's Town-hall, Charing-cross, Dr. Bedford Fenwick, President of the Association, being in the chair.

On the following day a meeting was held at the Horns Assembly-rooms, Kennington, when Dr. J. W. J. Oswald presided. Mr. George Brown and Mr. George Jackson addressed all these meetings, and Dr. Rentoul the first two, and on each occasion the proceedings terminated with a vote of confidence in the three candidates nominated by the Association.

THE BATTLE OF THE CLUBS.

GREAT YARMOUTH AND GORLESTON.

YET another battle, and as has been the case without exception hitherto, the medical men have every tittle of reason and justice on their side.

In Great Yarmouth and Gorleston the club system is very extensive and has, we are informed, been worked for many years impartially and amicably in the Bloater-towns. But the last five years have brought a change over the face of things. Juvenile clubs have been opened into which children are admitted at one year of age. Medical aid associations have been formed to look after the wives and children of members. A Female Foresters' Club has been started. No supervision has been exercised over the admission of members to the clubs, so that many persons enjoy the full benefits of sick-pay and medical attendance whose means are comparatively large.

The medical officers of the clubs felt it their duty to themselves to withstand such encroachments upon their time and services, and accordingly they addressed the members of the clubs in an exceedingly temperate letter to the local press. In this they pointed out that benefit clubs were intended originally for men only, real working men unable to pay the medical man out of their weekly wage, but that of late innovations had been introduced into the club system making it necessary that there should be a re-adjustment of payments to the medical officers in respect of the inclusion of female and juvenile members, while a wage limit *must* be enforced. The result of this letter was that a meeting of delegates of the clubs was held. To this the medical men sent a circular letter formulating the terms upon which they considered that a re-adjustment of payment should be made, and asking for a conference between the delegates and themselves. To this communication came a reply from the Ancient Order of Foresters Friendly Society ignoring the request for a conference and simply saying that the delegates disagreed *in toto* with the suggestions of the Incorporated Medical Practitioners' Association (District Committee of Yarmouth and Gorleston), which body had formulated the terms of re-adjustment.

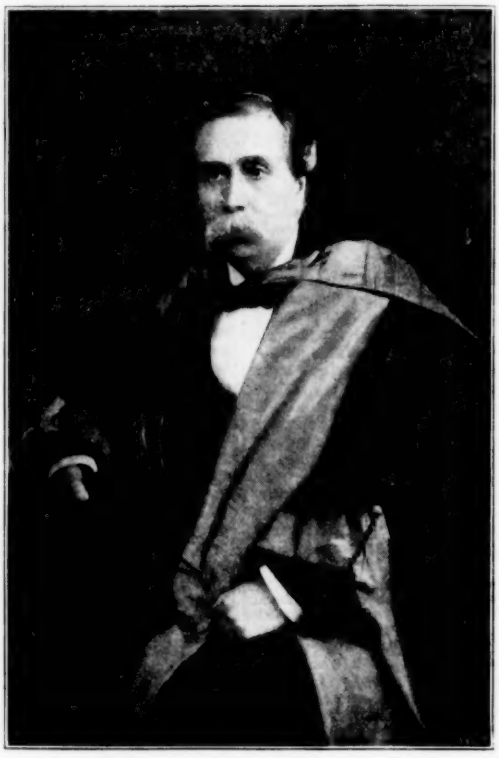
Such is the present position of things, for a great many "respectful and fraternal" letters which have passed between the medical men and the ancient order have not altered it. The medical men are firm, and of course will remain so. The ancient order made a proposal, but it was not satisfactory, and the medical men refused to entertain it while their reasonable request for a conference remained unanswered. We can only commend their attitude heartily. Unless the clubs will consent to a wage limit the prospects of the medical man in a district over-run with clubs are gone. His private patients are enrolled as members of the club, and, hardest thing of all, it is his name dangled before them that lures them into the club.

Obituary.

GEORGE HARLEY, M.D. EDIN., F.R.C.P. LOND. & EDIN., M.R.C.S. ENG., F.R.S.,

LATE PHYSICIAN TO THE UNIVERSITY COLLEGE HOSPITAL.

THE death of Dr. George Harley, which occurred on Oct. 27th, removes an eminent physician from London life. He was born at Haddington, in East Lothian, on Feb. 12th, 1829, and may be said to be the offspring of aged parents, seeing that he was not born until his father, George Barclay Harley, had reached the age of sixty-three years and his mother forty years, and he was the last child and only son of the family. At the age of seventeen years he matriculated as a medical student at the University of Edinburgh and graduated in 1850. Before his graduation he brought himself into professional notoriety, while acting as house surgeon to the Maternity Hospital, by having, on a sudden emergency, single-handed and without any preparation, successfully extracted by the Cæsarean section (after the death of the mother from heart disease) a living child at the seventh and a half month, now grown up to be a man and the father of a family. The case was read by Professor (afterwards Sir James Y.) Simpson to the Medico-Chirurgical Society and published in the *Edinburgh Journal of Medical Science* of July, 1850. After graduating, Dr. Harley acted as resident surgeon, and later as resident physician, to the Royal Infirmary, and subsequently went to Paris, where he began his scientific studies in the physiological and chemical laboratories of Robin, Verdeil, and Würtz. While working there he made several important researches, as is recorded in the large work of Robin and Verdeil entitled "Chimie Anatomique." The most notable was his finding that iron is a constant constituent of healthy urine and that the colour of normal human urine is due to the presence in it of the effete colouring matter of the blood; to this substance he consequently gave the appropriate name of "urohæmatin." The latter discovery, which was published separately in the *Pharmaceutical Journal* of 1852, attracted the attention of Professor Scherer of Würzburg—an authority on urine pigments—who, in Schmidt's *Jahresbericht* of the following year, called in question the views of the young physiologist, a circumstance which led to important results in Harley's future career. After working twelve months in Verdeil and Würtz's chemical laboratory Dr. Harley proceeded to the Physiological Laboratory of the College of France, which, when he entered it, was under the superintendence of the renowned Magendie. Magendie, however, within a couple of months retired, and his place was taken by Claude Bernard, whose researches on the influence of the liver in the production of diabetes led Dr. Harley to conceive the idea that it might be possible so to stimulate the nerves of the liver as to cause it to manufacture such an excess of sugar as would suffice to produce diabetes. Failing to meet with encouragement from Professor Bernard he determined to experiment on the subject at his lodgings. Having fitted up a small laboratory, and a sufficiency of dogs for the research being provided, he, with the aid of one or two of his fellow students, notably Dr. John Bowman, soon had the satisfaction of demonstrating that by the injection of stimulating liquids, such as alcohol, aqua ammoniæ, sulphuric ether, and chloroform, into the portal circulation a true diabetes could be established in animals. More than that, he even found that he could render himself diabetic through simply disordering his digestion by living for three days entirely on asparagus rendered stimulating by pepper and vinegar. In fact, so successful was he in doing this that when he demonstrated his researches at the College of France before the commission appointed by the Société de Biologie to report upon them he made himself so diabetic that his urine contained sugar for fourteen days, and we need scarcely say that he never ventured to repeat the experiment. The paper alluded to will be found in the *Comptes-rendus de la Société de Biologie de Paris*, 1853. In 1853 Dr. Harley was elected Annual President of the Parisian Medical Society, and those who were present at its anniversary dinner will remember the sad and curious coincidence that happened on that occasion, when the distinguished Orfila, in proposing Harley's health, stated that, although he had never before taken part in any of the society's dinners, the pleasing experience of that night would in future never allow him to lose an opportunity of being present at its annual reunions. During the night he was seized with inflammation of the lungs which proved fatal, and a fortnight later the whole of the fifty gentlemen who had dined with him attended the great public funeral bestowed upon him by the State. After two years' residence in Paris, during which time he was almost entirely occupied with physiological researches, Dr. Harley proceeded to Germany, at that time in its zenith as an educational centre—to study physiological chemistry under Liebig, histology under Kölliker, and pathology under Virchow, spending another two years at the Universities of Würzburg, Giessen, Berlin, Vienna, and Heidelberg. It has already been said that Professor Scherer had called in question Dr. Harley's statements regarding the nature of the colouring matter of the urine and the normal existence of iron in it. This led to his going to Würzburg and entering himself as a student in Professor Scherer's laboratory. Nothing could have been more fortunate than this course, for not only did he soon convince Professor Scherer that he was right in his statements, but before leaving Würzburg he communicated his research to the Academy. Professor Scherer publicly complimented Harley on it, and requested the Academy to confer upon him the honour of its corresponding membership, which it readily did. During the time Dr. Harley remained at Würzburg he worked in the laboratories of



GEORGE HARLEY, M.D. EDIN., F.R.C.P. LOND. & EDIN., M.R.C.S. ENG., F.R.S.,
LATE PHYSICIAN TO THE UNIVERSITY COLLEGE HOSPITAL.

both Kölliker and Virchow, and thus laid the foundations of the histological knowledge which afterwards (in 1855) obtained for him the lectureship of practical physiology and histology at University College, London. While working in Germany Dr. Harley published two scientific memoirs, one entitled "Urohämatin und seine Verbindung mit animalischen Harze," and another on the "Harns und Blutes einer an Hydrops und Albuminurie leidenden Schwangern," in conjunction with Dr. Gegenbaur. This last-named paper still furnishes the most complete analysis of the urine and blood in a case of albuminuria. While at Heidelberg Harley was almost entirely occupied in the laboratory of Professor Bunsen in acquiring a knowledge of the subject of gas analysis. The time, however, was well spent, for it enabled him after his return to England to make a most elaborate series of researches on the chemistry of respiration, only a small part of which has ever been published, and that part was communicated to the Royal Society in 1864. The publication of this paper in the Philosophical Transactions saved its author £20 out of the £70 then required (1865) to be paid on attaining the honour of the Fellowship of the Royal Society, while it likewise obtained for him a pecuniary grant of £50 for the research.

After quitting Germany Dr. Harley proceeded to Italy, but he had scarcely been many days at the University of Padua before he discovered that he could learn nothing of scientific medicine in that then backward Italian school, so he returned to England at the end of 1855. He then came to London, and within five days of his arrival he was made Curator of the Anatomical Museum at University College and received an intimation that the reception of the testimonials for a lectureship on practical physiology and histology then vacant was, by order of the council, postponed on his account for three months. In due course of time Dr. Harley was appointed to the vacant lectureship, and from that day his rise in the school was rapid, for in 1859 we find him appointed to the professorship of medical jurisprudence, and soon afterwards he was made physician to University College Hospital. After becoming attached to University College Medical School he published, in the Proceedings of the Royal Society, a paper on the Oxygen of the Blood which combated the previously generally accepted doctrine of Magnus that the respired oxygen entered into no chemical combination with the constituents of the blood, but formed with them merely a physical mixture. He showed, indeed, that precisely the reverse was the case. Immediately after the great trial of Palmer for poisoning his friend Cooke with strychnia in 1856, and at a time when little was known regarding the toxic effects of that substance beyond that it induced tetanic convulsions, Dr. Harley published a series of papers which threw considerable light on the physiological action of strychnia on the animal body. These papers are referred to in the appended bibliography. In these articles he showed that the poison acts in precisely the same way, though with different degrees of rapidity, however introduced, and that, notwithstanding that it is called a nerve poison, it has no direct action on the nervous system whatever, but only affects it through the intermediary of the circulation. He found experimentally that the tetanising action of strychnia on the nerves is entirely due to the chemical changes it produces in the constituents of the blood. Moreover, he showed that strychnia operates most quickly when introduced into a vein near to the heart. He was the first also to demonstrate that strychnia and wourali (arrow poison) have the property of reciprocally neutralising the toxic effects of one another, so that an animal poisoned by one may be cured by the administration of a hypodermic dose of the other when too large a quantity has not been taken.

The year 1856 appears to have been for Dr. Harley one of hard work, for in it, besides literary production, he was occupied with researches on the anatomy and physiology of the suprarenal bodies. He likewise communicated to the Zoological Society an interesting paper on the Anatomy of a New Species of Pentastoma, which he had found in the lung and air sac of an Egyptian cobra. In 1856 Dr. Harley started in practice in Nottingham-place; but at the end of twelve months, having had only two patients and having received from them but a few pounds, he thought it better to remove the door-plate until he had made a sufficient reputation to lead people to consult him. Consulting practice came to him sooner than he expected and from a quarter little anticipated. The first medical man who called him to a case was the late Sir Thomas (then Dr.) Watson. In December, 1856, Dr. Harley had shown at the Pathological Society, of which Dr. Watson was then President, a large encysted hepatic intestinal calculus (weighing 450 grains) and had explained how he thought it got into the duodenum by ulceration direct from the gall-bladder. The theory given being not only perfectly new to Dr. Watson, but appearing both reasonable and ingenious, led him, as he afterwards said, to put his "mark upon the young man," and from that time until he gave up practice he repeatedly consulted with Dr. Harley, not only in liver, but also in renal cases. This may be said to have led to Dr. Harley's subsequent success as a consulting physician. In 1858, immediately after he had been elected a Fellow of the Chemical Society, his career was nearly brought to an untimely close by his taking, by way of experiment, between three and four drops of pure nitro-glycerine. Its effect was first to send up the pulse to 130 and then to reduce it to less than 40 per minute; at the same time it gradually paralysed him from the feet upwards, without, however, in the slightest degree affecting his consciousness. After the administration of ammonia and brandy the alarming effects passed off in about an hour and a half. This accident happened a couple of days after a paper on the effects of nitro-glycerine had appeared from his pen in the *Medical Times and Gazette* in April, 1858. In THE LANCET during the same year he published articles on the Histology of the Suprarenal Capsules, organs which at that time were attracting a great deal of attention. At the meeting of the British Association for the Advancement of Science held at Leeds in that year Dr. Harley communicated a paper entitled Notes of Experiments on Digestion, written to show that pure pancreatine unites in itself the digestive functions of the salivary, gastric, and biliary secretions. This discovery of these compound effects of pure pancreatine had much to do with the subsequent employment of pancreatic emulsion as an artificial digestive agent, though it was many years before the suggestion of employing pure pancreatine as an artificial digestive agent was carried into effect.

In 1859 Dr. Harley was appointed Professor of Medical Jurisprudence in University College, London. In the year following, in the *British and Foreign Medico-Chirurgical Review*, appeared an original article on the Chemistry of Digestion, in which he showed, by the result of experiment, that the reason why the living stomach is not itself digested is because it is protected from the solvent action of its own gastric juice by a layer of alkaline mucus, which is as rapidly replaced as it is removed during the digestive process. About the same time he communicated to the Royal Society a paper on the Saccharine Function of the Liver. To the Pathological Society Dr. Harley showed at this time specimens and microscopic drawings of a peculiar and unusual disease of the osseous tissue in the horse resembling in many respects mollities ossium and osteoporosis in the human subject; and in 1861 he exhibited a uterus and its appendages at the outbreak of the catamenia in a woman who committed suicide just as her menses were on the point of appearing. In 1861, at the request of his friend the late Frank Buckland, he published in the *Field* a paper entitled "A Dead Heart Pulsating," in which he showed how the physiologist has the power of producing the wonderful sight of a dead heart in a living body by means of antiar (the arrow poison of the Bornese), as well as a living heart in a dead body by means of wourali poison (the arrow poison of the Guianese).

During the year 1862 Dr. Harley communicated to the Royal Medical and Chirurgical Society an elaborate paper on the Pathology and Treatment of Jaundice, which showed that jaundice was not, as it had hitherto been supposed to be, a disease, but only a mere symptom, like pain, of many widely differing pathological conditions. The advanced views Dr. Harley then enunciated have been adopted by every subsequent writer on diseases of the liver. It was in this year also that he had awarded to him by the Royal College of Surgeons of England its triennial prize of fifty guineas for his dissertation on the Anatomy and Physiology of the Suprarenal Bodies. He was likewise an active member of the committee appointed by the Royal Medical and Chirurgical Society to study the subject of suspended animation by drowning, hanging, &c., the experiments for which were made in his laboratory at University College. At the meeting of the British Association at Cambridge in 1862 he read the results of an elaborate investigation into the post-mortem appearances met with in animals slowly poisoned by daily minute doses of arsenic; also a paper on Ozone and

Antozone, exhibiting a rare form of fluorspar (given to him by Professor Baron von Liebig) possessing the extraordinary property of emitting a strong odour of hypochlorite of lime when pounded in a mortar and yielding to distilled water an oxidising agent, which, by its reactions with different chemicals, he showed was, as Schönbein had asserted, antozone. Heating the mineral causes it not only to lose the property of giving off any odour, but also of transforming HO into HO_2. In 1863 Dr. Harley published in the Transactions of the Obstetrical Society a case in which gas was expelled with a loud noise from the vagina of a woman aged thirty-three years, at the same time exhibiting an ingenious contrivance by which he discovered that the gas expelled was simply air which had been previously sucked in by an abnormal spasmodic action of the abdominal muscles. In June, 1863, he communicated to the Royal Medical and Chirurgical Society a paper on the Ordeal Bean of Old Calabar, in which he drew an interesting comparison between its action and that of belladonna, woorali, and conia. In August, again, he furnished the British Medical Association with an account of the botanical characters and therapeutical properties of the ordeal bean, which was translated into French and published by Professor Robin in the *Journal d'Anatomie et de Physiologie* of Paris. In 1863, also, was issued Dr. Harley's work on "Jaundice: its Pathology and Treatment," the appearance of which marked a distinct advance in the study of diseases of the liver and pancreas. We may also refer, as a clinical curiosity, to "An Extraordinary Case of Spasmodic Cough in a Girl aged Fourteen Years." The number of times the girl coughed was carefully counted at intervals by students specially appointed for the task, and ascertained to be at the rate of 70 per minute—that is to say, 4200 times per hour; and reckoning that the girl coughed only twelve out of the twenty-four hours she coughed the enormous number of 50,400 times daily. Under anti-spasmodic treatment she completely recovered.[1]

In 1864 Dr. Harley took an active share in the foundation of the Edinburgh University Club. He belonged to its first council, and it was on his proposition that Sir David Brewster was chosen its first president. In this year he was elected to the Fellowship of the Royal College of Physicians of London, having already been a Fellow of the Edinburgh College since 1858. In 1864 he was an active member of the committee appointed by the Royal Medical and Chirurgical Society to report on the physiological and toxic effects of chloroform, the experiments on which, like those on drowning, were performed in his laboratory at University College. At the Bath meeting of the British Association, in 1864, Dr. Harley for the first time appeared in the ranks of the anthropologists and read a paper on the Poisoned Arrows of Savage Man, illustrated by the exhibition of poisoned arrows from every quarter of the globe. Dr. Harley aimed to demonstrate that both North and South America were originally peopled from different parts of Asia, more especially from Borneo and China. He proved his theory as regarded South America by showing to the meeting the blow-tubes and poisoned spikes of the Malays and the inhabitants of Guiana respectively. There is, however, a most remarkable difference in the physiological nature of the poisons employed, for while in Borneo it is the antiar, heart-paralysing poison of the upas tree, in Guiana it is the limb-paralysing poison woorali of the strychnos toxiferos tree. In 1865 Dr. Harley published in the Transactions of the Royal Medical and Chirurgical Society notes of two cases of Intermittent Hæmaturia, bringing before the profession for the first time the important fact that in certain forms of malarial disease all the constituents of the blood may be eliminated by the urine, making the liquid either chocolate-coloured or quite red, and yet that scarcely a single whole blood corpuscle may be detected in it by the microscope.

In 1868 appeared a book on Histology, being the demonstrations of microscopic anatomy as a guide to the animal tissues in health and disease which Dr. Harley had given at University College, edited by his old pupil, George T. Brown, afterwards inspector to the Board of Health. The second edition of the book he edited himself. After fifteen years' continuous working with the microscope an unfortunate accident happened to Dr. Harley. Suddenly, while he was working with a small lens under a great illumination, without the slightest warning a bloodvessel gave way in his left retina. As this occurred during the winter session and it caused him at first only discomfort he went on with his microscopical lectures for nearly two months, when an attack of acute retinitis set in followed by a glaucoma so severe that extirpation of the diseased eyeball was recommended in order to save the sound one, which had become sympathetically affected. He, however, firmly declined to submit to the operation, saying he would first try the effect of complete physiological rest by going into a totally dark room for three, six, or even ten months as might be necessary. The experiment was tried with the most remarkable result, as was reported in THE LANCET.[2] After living in a couple of totally dark rooms—a bedroom and a large, airy sitting-room—in a house at Shaldon, in Devonshire, for nine months, during which time he never saw so much as his own hands, he came forth a cured man. Instead of losing his visual power by the darkness his vision became excessively acute; but he for a time lost the power of differentiating colours, everything appearing to him as either black or white, and of calculating even the shortest distances by the eye, two facts which prove that the calculation of distance and the distinction of colour by sight are not intuitive, but rather the offspring of education, and explain why infants continually knock over the things they try to take hold of. The colours which he was longest in being able to differentiate were pale greys and mauves. For the first month all mauves, blues, greens, and yellows appeared to him to be perfectly white, while all greys, browns, and reds looked as distinctly black. The details, as recorded in THE LANCET, are exceedingly interesting as well as instructive, if for nothing else than showing what determination, coupled with perseverance, will accomplish. While Dr. Harley was undergoing his probation in total darkness his mind was not idle. Having had a small portion of his large sitting-room partitioned off an amanuensis sat there and wrote, at his dictation, among other things, a book which he published in 1872, entitled "The Urine and its Derangements," which was not only shortly afterwards reprinted in America, but translated into French and Italian. On his return to London after a two years' absence with his eye recovered, but not yet strong, he expected to find himself a ruined man in so far as his consulting practice was concerned. But, to his surprise and relief, exactly the contrary proved to be the case. No sooner had Dr. Harley returned to London than he became as busy as ever. In May, 1868, he took a prominent part in a deputation from the Edinburgh University Club to the Lord Advocate to obtain Members of Parliament for the Scottish Universities, and subsequently acted as chairman of the London Liberal Committee—though himself a Conservative—in order to get Dr. Lyon Playfair, as a scientific man, to represent the University of Edinburgh. In 1878 appeared from his pen, in the *Haddingtonshire Courier*, a series of articles under the *nom de plume* of "G. Virtute et Fide," on the Ecclesiastical Buildings of Haddington, more especially on its fine Abbey Church—the Lucerna Laudoniæ—with which certain ecclesiastical members of his family had been intimately connected. Among other of his non-professional literary productions allusion may be made to a Christmas Carol, entitled "My Ghost Story," which appeared in Mrs. Riddell's *Home*, a Christmas Annual for 1879-80. He also published, in the Selborne Society's letters, a psychological paradox under the title of "A Blackbird's Widowhood, Wooing, and Second Wedding" (August, 1887).

Enough has been said of Dr. Harley's general writings to prove that he was a man of varied attainments; but his one great hobby seems to be defined in the single word "simplification." For not only has he greatly simplified the means of physiological and chemical research by the adoption of various contrivances to save time, and invented a microscope which, by a simple adjustment of its appendages, can be transformed from a monocular into a binocular, or into a polarising instrument either of a high or of a low power, but in 1877, when the Spelling Congress met in London, he even tried his hand at reforming our orthography, and published a book entitled "The Simplification of English Spelling," in which he powerfully advocated, as a preliminary stage to any great spelling reform, the total omission of redundant and useless duplicated consonants from every word in the language except personal names. By

[1] Medical Times and Gazette, Aug. 1st, 1863.

[2] THE LANCET, Feb. 1st, 1868.

far the most important work that has appeared from his pen is a large one on "Diseases of the Liver," which may be regarded as his *magnum opus*, in which he proved the truth of the motto borne on the title page, that "true science is the key to wise practice," by giving numerous illustrations of the manner in which, when physiological chemistry is discreetly applied at the bedside, it not only elucidates some of the very darkest problems in the etiology and pathology of disease, but furnishes the busy practitioner with a trustworthy guide to successful treatment. Moreover, in it the author strives successfully to prove that nature, in things medical, as in everything else, invariably acts on one great and uniform plan, and that, notwithstanding the incongruities in the nature and clinical history of the hepatic diseases met with in different quarters of the globe, when the light of modern science is focussed upon them their pathology is found to be everywhere identical, the difference in their degrees of virulency not being entirely due to climatic influences, but partly to the constitutional peculiarities of the sufferers, originating in differences in their modes of life. The book was reprinted both in America and Canada, and translated into German by Dr. J. Kraus of Carlsbad, the well-known writer on liver affections; whilst Dr. J. Cyr, the French translator of Murchison's book on the liver, acknowledged[3] that he knew of no other work on the liver which could be advantageously compared with that of Dr. George Harley from a practical point of view. Among the publications Dr. Harley placed before the profession are a pamphlet, showing how the existence of impacted gall-stones in the bile-ducts can be ascertained by sounding, and a book which appeared in 1886 on Inflammations of the Liver and their Sequelæ, in which he claimed that not only biliary sand and small gallstones from the gall-bladder, but likewise renal calculi impacted in the ureters, can be successfully expelled by judiciously regulated digital manipulation; that the capsule of Glisson can be advantageously punctured in cases of congestive liver induration; and that acute hepatitis may be relieved by direct hepatic phlebotomy.

In July of this year he contributed to THE LANCET an article on Gout in Relation to Liver Disease. At the meeting of the British Association in Liverpool in August he read a paper on "Primitive Writings in Sticks and Bones," tracing the origin of writing among the native tribes of Australia, &c. As will be seen from the above he was a man of many interests and very decided opinions. He was a great advocate of cremation, and at his own wish his remains were cremated at Woking on Oct. 30th, and afterwards buried at Kingsbury Old Church, there being no invitations or flowers at his own desire.

WILLIAM MUNRO, C.B., LL.D., M.D. GLASG., L.R.C.S. EDIN.,

SURGEON-GENERAL, A.M.D. (RETIRED).

WE much regret to announce the death of Surgeon-General W. Munro, in his seventy-third year, at his residence in West Cromwell-road, on Oct. 30th last. He was an old and most distinguished officer of the Army Medical Department. It is probable that very few officers had seen more, or a greater variety of, field service than the deceased. He had a total service of thirty-six years and had been present at fifteen battles and engagements, and at the sieges of Sebastopol and Lucknow. Surgeon-General Munro was the son of an Inspector-General of Hospitals and was born in 1823, took his M.D. degree at Glasgow and became L.R.C.S. of Edinburgh in 1844, and was made Hon. LL.D. of Glasgow University in 1888. He entered the Medical Department of the Army in 1844, became Surgeon in 1854, and after passing through the various steps of promotion was made Surgeon-General in 1876. His record of war service is, as we have said, a remarkable one. He served in the Kaffir War of 1846-47, and as surgeon of the 93rd Highlanders in the Crimean campaign of 1854-55, in the Indian Mutiny, 1857-58, and was present at the operations for the relief of Lucknow under Lord Clyde, at the battle of Cawnpore, Dec. 6th, 1857, and pursuit, at the action near Futtehghur, the siege and fall of Lucknow, the action in Rohilcund and the attack on Fort Rugia, the actions at Alygunge and Bareilly, the campaign in Oude and the actions of Posgaon and Russelpore, and also the attack on Fort Methoulie. Subsequently he was removed from his regiment to act as principal medical officer of the combined European and native Euzufzai field force during the final operations in the Umbeylah Pass in December, 1863, under Major-General Garvock. For these services he was mentioned in despatches and thanked by the Governor-General in Council, and in 1865 he was created Companion of the Bath. In addition to the Companionship of the Bath the following decorations were conferred upon him: the fifth class of the Turkish Order of the Medjidieh, the medal for South Africa, the medal and three clasps for the Crimea, with the Turkish war medal, the medal and two clasps for the Indian Mutiny, and the medal and clasp for the Euzufzai campaign, India, in 1863. Not long before his retirement he received the reward of £100 a year for distinguished military service.

Surgeon-General Munro was for a very long time the surgeon of the 93rd Highlanders when the regimental system was in force, and he acquired, most deservedly, a very great influence and popularity in that distinguished corps. He published some years ago an interesting account of his army experience, in which the incidents of his service with the 93rd assumed a prominent place, and in another work published by a late officer of that regiment their surgeon's services and devotion to duty were referred to again and again in warmly eulogistic terms. There is no doubt that the late Surgeon-General Munro was a brave man with all the instincts of a soldier and an excellent sample of the best sort of regimental surgeon. We think it much to be regretted that the very distinguished war services of this officer were not recognised by some higher mark of honour than a Companionship of the Bath. Few officers were better entitled on that account to be a Knight Commander of the Bath than the late Surgeon-General Munro. He was for some years at the headquarters office of the department in direction of the medical branch of that office during the *régime* of the late Sir William Muir. On leaving that post he became Principal Medical Officer at Gibraltar, and subsequently retired from the service.

[3] Journal de Médecine, Feb. 3rd, 1883.

FREDERICK EDWARD ADAMS, M.D. R.U.I.

FREDERICK EDWARD ADAMS, who died at Genoa on Oct. 3rd, was a distinguished graduate of the Royal University of Ireland, taking the degrees of M.D. and M.A.O. with honours in 1882 and that of M.Ch. in 1883. Subsequently in 1889 he obtained the D.P.H. of Cambridge, and about the same time was elected a Fellow of the Chemical Society. During his career in Queen's College, Cork, he obtained several scholarships and exhibitions, acting for some time as demonstrator of anatomy in the school as well as house surgeon and physician to the county hospital. It was in the Cork Fever Hospital that Dr. Adams, as extraordinary physician, first learned the experience of epidemic disease which finally induced him to turn his attention to public sanitation. Having practised as a general practitioner in England for a period of two years he was elected medical officer of health for Bolton in 1890, which post he held until 1895, resigning on his being appointed medical officer of health for East Hertfordshire. At Bolton the interest he always took in the study of epidemic fevers was evinced by his retaining the position of visiting physician to the Bolton Fever Hospital. Dr. Adams was one of those only too common instances in the profession of medicine of a man nobly struggling on in the discharge of duty under the incentive of a keen love of his work in the face of great physical suffering and chronic illness. For many years he suffered from a serious affection of his lungs, at one time his life being despaired of, yet even to the last few months he was never out of harness. Those of his old fellow students and teachers—the writer of these lines being one of the latter—will remember the gentle disposition, the courteous manner, and the reliable nature that endeared Frederick Edward Adams to all who knew him.

WE are requested to announce to the medical profession that all particulars of a new Church Union can be had of the honorary secretary, care of 7, Paternoster-square, E.C.

THE HEALTH OF BELFAST.

ON Aug. 1st of this year a committee of the Belfast City Council was appointed to inquire into the causes of its high death-rate and of its insanitary condition. The members of this committee, which took a great deal of evidence, have just presented their report in the form of an elaborate document of some fifty pages, which was finally agreed to by a majority at the last meeting and will be considered at a special assemblage of the city corporation. In the report the committee consider the death rate (26·2 according to the Registrar-General and 24·3 according to the city officer of health for 1895) of Belfast to be too high. They point out that the death-rate of the city is not, like that of other towns, diminishing, and, what is very serious, they find that in such diseases as typhoid fever, typhus fever, scarlet fever, diphtheria, and diarrhœa Belfast has a much higher death-rate than the average of the thirty-three large English towns, and occupies a worse position in the death-rate list than any single one of these large industrial centres. Confining their attention to such causes of the high death-rate of Belfast as are more directly under municipal control and to which municipal responsibility directly extends, the committee say, in their opinion, the principal of these are: 1. The absence of waterclosets in such a large proportion of houses and the wretched privy and ashpit system in such general use. 2. The insanitary sites on which thousands of houses have been erected. 3. The numerous courts and lanes that have been allowed to exist in the city for many years though condemned by the sanitary officers as unfit for human habitation. 4. The feeble and ineffectual manner in which the Public Health Acts have been administered. 5. The inadequate supervision exercised over the construction of streets, sewers, and drains. 6. The large number of back passages that have been allowed to remain undrained, unpaved, and filthy. 7. The number of open sewers, cesspools, and other nuisances that have been permitted to continue in the town. After dealing very fully with each of these causes the committee submit the following recommendations.

The sanitary staff.—1. Four additional sub-sanitary officers at least should be appointed immediately. 2. The various medical officers of health (dispensary medical officers) should be required by the Public Health Committee to report to the sanitary authority any nuisances in their district of which they may become cognisant or any influence affecting, or threatening to affect, the public health within such district. 3. That a much stricter system of supervision be exercised over the work done by sub-sanitary officers. 4. That at the first suitable opportunity a properly qualified analyst be attached to the staff of the Public Health Department.

Notification of infectious diseases.—That the Infectious Diseases (Notification) Act be immediately adopted, and that a map or maps be made each year showing in colours the precise locality of every case of zymotic disease which occurred in Belfast during the year, together with an index giving the street number, and that this index and map be open to public inspection.

Insanitary houses.—That a complete list of all the houses in Belfast which in the opinion of the medical superintendent officer of health are unfit for habitation be made out and that they be either closed or put into proper sanitary condition.

Houses without back passages or waterclosets.—That where any house contains a privy but no back passage the Public Health Committee shall order a watercloset to be substituted where practicable; and if it be found that the sanitary authority has not power to require such substitution, power be obtained to compel owners, on such terms as the Council shall deem equitable, to provide waterclosets instead of privies, and to provide back passages in all cases where the Council shall consider them necessary.

Insanitary sites.—The committee recommend that no ashpit or midden refuse, or any refuse containing animal or vegetable matter, be deposited by, or with the authority of, any officer or servant of the Council on any land intended or likely to be used for building purposes, or upon any place within the city boundary, unless with the consent of the Council; and that no building be erected on any "made" ground, or on any ground on which ashpit, midden, or other refuse containing animal or vegetable matter has been deposited, until such deposit has been removed or until a joint certificate has been signed by the surveyor, medical officer of health, and the executive sanitary officer that they have personally examined the said ground and that such deposit is, or has become, innocuous; and that a map of the city, open to public inspection, be prepared, showing all the sites on which ashpit or other refuse has been deposited and upon which dwelling-houses have been erected; and that this map shall also show the various vacant spaces in the city which have been used as "tipping" stations and which have not been built upon.

Uncompleted streets and back passages.—That these be sewered, flagged, or paved at the earliest possible date.

Drains and sewers.—The committee recommend that every house shall have ventilated drains with properly ventilated intercepting traps, and that in future all sewers be laid in concrete unless the surveyor certify in writing that such is unnecessary; further, that all houses with inside waterclosets be examined with the smoke-test and water-test before being passed by the surveyor as fit for occupation, and that in future the drains of all new houses be tested. That a record, open to public inspection, be kept in the town hall giving the date when such tests were made and the results thereof.

Ashpits.—That these be furnished with proper doors and coverings as required by Section 44 of the Public Health Act, 1878.

Plans.—That notice of all plans, with the name of the *bonâ-fide* owner on whose behalf such plans are lodged, shall be placed on the agenda paper, and shall be considered before any special business of the committee be taken up, and that no plan involving any departure from the by-laws be signed until the specific attention of the Council has been directed to it and its sanction obtained. The committee further suggest: 1. That a systematic examination of houses shall be made with special reference to ventilation and water-supply, and to ensure that cisterns supplying water for household purposes are not connected with waterclosets and are not open to any means of pollution. 2. That a systematic visitation be made of the schools of Belfast with the special object of determining whether there is overcrowding and whether the ventilation and sanitary arrangements are satisfactory. That a report be made to the Public Health Committee of the laundries that have no ventilation except by open windows and of workshops where both males and females are employed and no separate sanitary accommodation is provided. 3. That all refuse deposited in pails or boxes be removed daily by the Public Health Department and that all such boxes or pails be provided with a cover. 4. That a small sub-committee be appointed by the Council to examine thoroughly the efficiency and cost of the most modern destructors, and to report thereon at an early date with a view to their adoption if deemed desirable. Appendices are attached to the report giving lists of houses with defective sanitary accommodation, a list of officers in the Public Health Department, a list of uncompleted back passages, and the report of the medical officer of health on filled-in ground at York-road.

POST-SCARLATINAL DIPHTHERIA IN THE FEVER HOSPITALS OF THE METROPOLITAN ASYLUMS BOARD.

IN a previous article we dealt with the report of the statistical committee of the Asylums Board for 1895, and we propose here to discuss, by the aid of the matter contained in the reports of the medical superintendents of the fever hospitals, the interesting and, from the standpoint of hospital administration, the eminently important subject of post-scarlatinal diphtheria.

We select this subject from the reports partly because it is one to which considerable attention has been given and partly because the most important question dealt with in the volume before us—i.e., that of the antitoxin treatment of diphtheria—has already received attention in our columns. It may be well in the first instance to recall in a few words the theses which have been brought forward to explain the incidence of diphtheria

upon patients suffering from scarlet fever who have been isolated in the fever hospitals of the Asylums Board. By some it has been thought that this dreaded sequel to scarlet fever is to be explained by the fact that both scarlet fever and diphtheria are treated in the same hospital, and the supporters of this view infer that the virus of diphtheria is conveyed in some direct or indirect manner from the diphtheria to the scarlet fever wards. Against this hypothesis it has been urged with no little force that post-scarlatinal diphtheria was prevalent, although in a minor degree, in the fever hospitals of the Board before diphtheria was admitted into them, and, further, that the disease manifested itself in the convalescent hospitals of the Board to which no diphtheria was admitted. By others "overcrowding" has been offered as an explanation; but although at one or two of the Board's hospitals the facts observed for a certain period lent support to this view subsequent experience has failed to confirm it. Finally, defective drainage has been urged as an explanation of post-scarlatinal, as of uncomplicated, diphtheria; but here, again, the evidence is far from convincing. In the reports of the medical superintendents for 1895 Dr. Goodall suggests an explanation, which, although not supported by overwhelming evidence, has much to commend it, and it has also the merit of throwing a new and somewhat consoling light upon the problem in question. Dr. Goodall recalls the fact that before diphtheria was admitted into the Board's hospitals post-scarlatinal diphtheria had already manifested itself therein, and he goes on to show that in the year 1888 diphtheria, as gauged by the reports of the Registrar-General, as also by other evidence, underwent in the metropolis a marked rise; and collaterally with that rise there was an increase of post-scarlatinal diphtheria in the hospitals of the Board. Although, he points out, this latter fact may be held to lend support to what we will call the maladministration thesis, it is also capable of receiving an altogether new interpretation—i.e., that the increase of post-scarlatinal diphtheria in the scarlet fever wards is but the expression inside those wards of the general increase of diphtheria which in 1888 suddenly commenced to manifest itself in the metropolis as a whole; and he shows, what is obviously very pertinent to his view, that in the year 1893 the attack-rate of post-scarlatinal diphtheria in the hospitals of the Board was 1·3 per cent.—i.e., not much in excess of the incidence of diphtheria for the same period on all the children in London between the ages of one and ten. Briefly put Dr. Goodall thinks that the increased facilities for the introduction of doubtful cases of scarlet fever, some of which may either be suffering from diphtheria or have the bacillus of that disease in the fauces, is on the whole the best explanation at present forthcoming of the prevalence of post-scarlatinal diphtheria in the Board's hospitals.

Dr. Goodall has, we notice, more fully developed his thesis in the last volume of the Transactions of the Epidemiological Society, which has just been issued, and we commend the paper to all those who are concerned with the very difficult task of fever hospital administration. The figures dealt with in the Asylums Board report relate solely to the metropolis, and it would be instructive to see them compared with those relating to other fever hospitals, such as those of Birmingham, where the rise in diphtheria has not until quite recently made itself manifest. There is, however, much in the report before us which must be regarded as considerably strengthening Dr. Goodall's position. For instance, Dr. Birdwood, medical superintendent of the North-Eastern Hospital, brings forward some very interesting evidence, compiled by Dr. Beggs, one of the assistant medical officers of that institution, as to the presence of the bacillus of diphtheria in the throats of patients suffering from scarlet fever. It appears that out of 140 cases of scarlet fever which were made the subject of bacteriological examination no less than 36·42 yielded the bacillus of diphtheria. Of these cases a little over 25 per cent. either presented clinical evidence of diphtheria or subsequently developed such evidence, but in a large number of cases the presence of the bacillus gave rise to no illness whatever and the bacilli subsequently disappeared. Here, then, is obviously much to support the view of Dr. Goodall, as it is clear that, if anything approaching the same conditions as those brought to light at the North-Eastern Hospital obtained in the days when no bacteriological examination was made, this risk of introducing diphtheria into the scarlet fever wards was by no means small. If this view be a correct one and be only a partial explanation of the prevalence of post-scarlatinal diphtheria, we may hope, with the progress of bacteriological examination, that a material reduction in this prevalence will be made. Undoubtedly all our fever hospitals should be fully equipped with bacteriological apparatus and with medical officers capable of conducting bacteriological examinations. As Dr. Caiger, medical superintendent of the South-Western Hospital, observes, the bacteriological examinations conducted at the laboratories of the Royal Colleges cannot do away with the desirability of maintaining a laboratory equipment at each of the fever hospitals.

Clearly it is incumbent upon the Asylums Board to develop and make use of every method of diagnosis and treatment which modern science indicates and to contribute the results to medical literature. The year 1895 will stand out in the annals of the Asylums Board as one in which two very important advances were made—the one the treatment of diphtheria by antitoxin serum and the other the diagnosis of diphtheria by bacteriological methods.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6860 births and 4104 deaths were registered during the week ending Oct. 31st. The annual rate of mortality in these towns, which had been 16·3 and 17·6 per 1000 in the two preceding weeks, further rose last week to 19·7. In London the rate was 20·2 per 1000, while it averaged 19·4 in the thirty-two provincial towns. The lowest rates in these towns were 12·3 in Portsmouth, 12·8 in Derby, 13·3 in Croydon, and 13·4 in Norwich; the highest rates were 23·5 in Wolverhampton, 23·7 in Liverpool, 24·7 in Nottingham, and 25·8 in Oldham. The 4104 deaths in these towns included 358 which were referred to the principal zymotic diseases, against 351 and 349 in the two preceding weeks; of these, 95 resulted from diphtheria, 66 from measles, 61 from "fever" (principally enteric), 47 from diarrhœa, 46 from scarlet fever, 43 from whooping-cough, and not one from small-pox. The lowest death-rates from these zymotic diseases were recorded in Portsmouth, Croydon, Blackburn, Norwich, and Preston, and the highest rates in Plymouth, Manchester, Nottingham, and Gateshead. The greatest mortality from measles occurred in Bradford, Brighton, Nottingham, Manchester, Gateshead, and Plymouth; from scarlet fever in Derby and Gateshead; from whooping-cough in Nottingham; from "fever" in Bolton; and from diarrhœa in Derby and Wolverhampton. The 95 deaths from diphtheria included 64 in London, 7 in Liverpool, 6 in West Ham, and 3 in Sheffield. No fatal case of small-pox was registered in any of the thirty-three large towns. There was 2 cases of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday last, Oct. 31st, against 4, 2, and 1 at the end of the three preceding weeks; 1 new case was admitted during the week. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 4160, against 4105, 4073, and 4164 on the three preceding Saturdays; 367 new cases were admitted during the week, against 424, 372, and 448 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 238 and 334 in the two preceding weeks, further rose last week to 387, but were 4 below the corrected average. The causes of 53, or 1·3 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Oldham, Bradford, Leeds, Newcastle-upon-Tyne, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had risen in the five preceding weeks from 14·6 to 18·9 per 1000, declined again to 18·6 during the week ending Oct. 31st, and was 1·1 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·8 in Aberdeen and 14·0 in Leith to 19·9 in Dundee and

21·5 in Glasgow. The 544 deaths in these towns included 24 which were referred to diarrhœa, 20 to measles, 10 to diphtheria, 9 to whooping-cough, 3 to scarlet fever, and 3 to "fever"; in all, 69 deaths resulted from these principal zymotic diseases, against 41 and 68 in the two preceding weeks. These 69 deaths were equal to an annual rate of 2·4 per 1000, which was 0·7 above the mean rate last week from the same diseases in the thirty-three large English towns. The 24 fatal cases of diarrhœa corresponded with the number in the preceding week, and included 15 in Glasgow and 5 in Edinburgh. The deaths referred to measles, which had been 5 and 16 in the two preceding weeks, further rose to 20 last week, of which 19 occurred in Glasgow. The fatal cases of diphtheria, which had been 3 and 5 in the two preceding weeks, further increased to 10 last week, and included 4 in Glasgow and 4 in Edinburgh. The 9 deaths from whooping-cough were within 3 of the number in the preceding week, and included 7 in Glasgow. The 3 fatal cases of scarlet fever showed a further decline from the numbers recorded in recent weeks, and included 2 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 116 and 122 in the two preceding weeks, further rose to 130 last week, but were slightly below the number in the corresponding period of last year. The causes of 36, or nearly 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·1 and 23·3 per 1000 in the two preceding weeks, declined again to 23·7 during the week ending Saturday last, Oct. 31st. During the past five weeks of the current quarter the death-rate in the city has averaged 23·6 per 1000, the rate during the same period being 16·8 in London and 15·8 in Edinburgh. The 159 deaths registered in Dublin last week showed a decline of 31 from the exceptionally high number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against 17 and 26 in the two preceding weeks; of these, 4 resulted from "fever," 3 from scarlet fever, 2 from whooping-cough, 1 from diarrhœa, and not one either from small-pox, measles, or diphtheria. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate during the same period being 1·7 in London and 2·1 in Edinburgh. The deaths referred to different forms of "fever," which had increased from 6 to 9 in the three preceding weeks, declined to 4 last week. The fatal cases of scarlet fever, which had been 2 and 9 in the two preceding weeks, declined again to 3 last week. The 2 deaths from whooping-cough showed a decline from the numbers recorded in recent weeks. The 159 deaths registered in Dublin last week included 28 of infants under one year of age, and 45 of persons aged upwards of sixty years; the deaths of infants showed a marked decline, while those of elderly persons considerably exceeded the number in any recent week. Four inquest cases and 4 deaths from violence were registered; and 48, or nearly a third, of the deaths occurred in public institutions. The causes of 10, or more than 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-LIEUTENANT K. B. BARNETT has embarked for Bombay, and Surgeon-Captain Jackson has been placed under orders for foreign service in India. Surgeon-Captain G. Bent, will hold himself in readiness for service at Barbadoes, embarking probably about Dec. 15th next. Surgeon-Major R. R. H. Moore will embark in the transport *Britannia* on Nov. 9th for India. He will act as P.M.O. during the voyage.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Lieutenant Johnston is transferred from the Quetta District to the Officiating Medical Charge of the 9th Bombay Infantry. Surgeon-Lieutenant Bakhle is appointed to the Officiating Medical Charge of the 5th Bombay Cavalry. Surgeon-Lieutenant Smith is appointed to the Poona District on general duty. Surgeon-Captain W. Carr Sprague has received charge of the Karwar Prison. Surgeon-Captain L. J. Pisani, Civil Surgeon, is appointed to the Jaunpur District. Surgeon-Captain G. M. C. Smith from Officiating Medical Charge of the 21st Punjab Infantry, has been appointed to the Medical Charge of the 1st Battalion 1st Gurkha Rifles, vice Brigade-Surgeon-Lieutenant-Colonel A. B. Seaman, retired from the service. Brigade-Surgeon-Lieutenant-Colonel R. Exham, A.M.S., has been detailed to proceed to England in Medical Charge of troops. Surgeon-Captain T. J. Lenehan, M.B., A.M.S., is appointed to the Civil Medical Charge of Roorkee, in addition to his military duties. Surgeon-Lieutenant-Colonel A. E. R. Stephens, Civil Surgeon of Jessore, is appointed to be Civil Surgeon of Purnea. Surgeon-Major Dharam Das Basu, Civil Surgeon of Purnea, is appointed to be Civil Surgeon of Jessore. Surgeon-Colonel D. E. Hughes, Principal Medical Officer, Bombay and Aden Districts, is appointed to officiate as Principal Medical Officer, Bombay Command, with the temporary rank of Surgeon-Major-General. Brigade-Surgeon-Lieutenant-Colonel R. C. Eaton, A.M.S., is appointed to officiate on the Administrative Medical Staff of the Army, with the temporary rank of Surgeon-Colonel. Surgeon-Major S. J. Thomson is confirmed in the appointment of Sanitary Commissioner, North-Western Provinces and Oudh.

Dr. Alfred Lingard, Professor of Bacteriology and Comparative Pathology, in charge of the Imperial Bacteriological Laboratory at Muktesar, N.W.P., India, is granted three months' privilege leave.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Fleet-Surgeons: William H. Patterson to the *Dædalus* and John C. B. Maclean to the *Revenge*. Staff-Surgeon Richard E. Biddulph to the *Trafalgar*. Surgeons: Charles J. S. Kelsall to the *Revenge;* George Hewlett, M.B., to the *Acorn;* and Herbert P. Shuttleworth to the *Barracouta*.

ARMY MEDICAL RESERVE OF OFFICERS.

The under-mentioned officers, having resigned their Volunteer appointments, cease to belong to the Army Medical Reserve of Officers:—Surgeon-Lieutenant-Colonel James Clark, M.D., F.R.C.S. Edin.; Surgeon-Major Robert W. Edginton, M.D.; and Surgeon-Captain J. Walter Beattie, M.B. Surgeon-Captain F. K. Pigott to be Surgeon-Major.

MILITIA MEDICAL STAFF.

Surgeon-Lieutenant-Colonel C. C. Walter, the Kent Artillery (Eastern Division, Royal Artillery), resigns his commission; also is permitted to retain his rank and to continue to wear the prescribed uniform on his retirement.

VOLUNTEER CORPS.

Rifle: 3rd Volunteer Battalion the Bedfordshire Regiment: Lieutenant William Kirwan Pauli is appointed Surgeon-Lieutenant.

THE FRENCH AUTUMN MANŒUVRES OF 1896.

According to the *Echo de Paris* the military manœuvres that lately came off at Charente were very successful from a sanitary point of view. Three deaths from accident were reported, but although upwards of 1400 cases of disease were treated none of these ended fatally, and for the most part the patients returned to duty after a few days. At the conclusion of the operations, although over 40,000 men were engaged, there were only 74 sick in the hospital. The principal sources of disability were bronchitis, pneumonia, and other respiratory affections, but a good many men also suffered from fever, especially among the marine infantry. In the opinion of the principal medical officer what is ordinarily called bad weather is preferable for manœuvres to a dry, hot season, so far as health is concerned, but doubtless the reference is to periods of excessive heat when sunstroke is rife. Wet, sloppy weather cannot *per se* be regarded as wholesome. The account furnished by the *Temps* of the same manœuvres is much less favourable. The number of sick was very considerable, says a writer in that paper; many cases of foot-soreness occurred, and, owing to the incessant rain, the unsuitable camping-grounds, the continual out-post work, and the abrupt variations of temperature, the ambulances were all quickly filled to overflowing. The removal of the invalids was, however, very efficiently conducted, and the medical corps proved itself to be quite equal to all the demands that were made upon it. Various

societies for succouring the sick and wounded rendered more or less good service, but a certain association controlled by ladies seems to have attracted a large amount of ridicule. A wooden hut fitted up with cushioned lounges and other luxuries was installed close to a railway station, and the fortunate few who obtained admission to its penetralia were regaled with hot coffee, chocolate, cakes of various kinds, and "grogs," together with kind words from the bevy of fair dames in attendance. Some irreverent young men were wicked enough to dub the establishment the "chalet-joujou," but clearly they must have been actuated by jealousy. The principal medical officer himself declared that the benefits conferred by the members of this association were considerable.

DEATHS IN THE SERVICES.

William Munro, M.D., C.B., LL.D., aged seventy-three. He graduated at Glasgow in 1844, and was made Hon. LL.D. of that university in 1888. In 1844 he entered H.M. Army, and by regular promotion he became Surgeon-General in 1876. In 1875 Dr. Munro was created a C.B.—a graceful recognition of thirty years' active service, during which he was present at fifteen battles and engagements. He held the following decorations:—The Companionship of the Order of the Bath, and the fifth-class of the Turkish Order of the Medjidieh; the medal for South Africa, the medal and three clasps for the Crimea, with the Turkish War medal; the medal and two clasps for the Indian Mutiny, and the medal and clasp for the Euzufzai Campaign, India, in 1863. Not long before his retirement he received the reward of £100 a year for distinguished military service. After retirement in 1881 his well deserved leisure was spent in recording in book form his many experiences, and these found a welcome reception in "Reminiscences of Military Service with the 93rd Sutherland Highlanders," "Records of Service and Campaigning in Many Lands," "Journal of a Tour in Egypt," and "A Two Months' Cruise in the Mediterranean." For the past two years his health had become much enfeebled and he suffered from failing vision. Only within the past few weeks, however, had he been completely laid aside, an attack of broncho-pneumonia eventually hastening his end. Surgeon-General Munro leaves a widow and grown-up family.

Surgeon-Major William Evelyn Alston, M.D., retired list, A.M.S., at his residence, Sandgate, on Monday, in his sixty-first year. He entered the Army Medical Service in 1859, was promoted to the rank of Surgeon-Major in 1875, and retired in 1879.

THE FEVER EPIDEMIC IN THE TRANSCASPIAN.

The epidemic of a severe form of malarial fever that has prevailed in the Transcaspian, of which a brief description was given in the *Times* of Oct. 26th, seems to have been of a very serious kind and to have given rise to a great mortality during the past summer among the inhabitants of that country. The Russian troops, officers and men, have likewise suffered severely from this fever, which has been followed by a fatal issue in many cases. The epidemic is attributed to the great overflow of the Murghab and the waterlogging of the soil followed by the exceptional heat of the summer. Occurrences of this kind, although usually on a smaller scale, are not uncommon in India under similar climatic conditions. Many years ago an epidemic of malarious fever, known as the Burdwan fever, prevailed in that district: and it will be remembered that a terrible epidemic of malarious fever attended with great mortality also prevailed many years ago in the Mauritius, and even now Port Louis and other parts of that island are very unhealthy. The history of many military expeditions in the past as well as those of the present day furnish abundant evidence of the crippling effects of malaria on troops campaigning in tropical and sub-tropical climates. The experience of the French army in Madagascar is one of the latest cases in point.

SOME LOSSES IN RECENT WARFARE.

We have had some experience in the past military history of this country of the losses incurred by campaigns in unhealthy climates and in desultory warfare in a difficult country and with semi-civilised people, but we have not of late years had to encounter the disastrous loss of life which Spain has been experiencing in Cuba or that which, but in a less degree, attended the French expedition in Madagascar. It is calculated that Spain has in two years sent out to Cuba a force amounting to over 165,000, but that, owing to sickness, invaliding, deaths from disease, and losses in fighting, she has now less than 150,000 efficient soldiers in Cuba fit to take the field. During the malarial season there were from 6000 to 10,000 men in hospital, with a mortality of about 10 per cent. The British losses which have taken place in South Africa from sickness and wounds during the desultory fighting in Rhodesia must, in the aggregate, be very considerable already, and there does not, unfortunately, seem any immediate prospect of their coming to an end.

THE VOLUNTEER OFFICERS' DECORATION.

The Queen has been graciously pleased to confer the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force who have been duly recommended for the same under the terms of the Royal Warrant, dated July 25th, 1892:— *North-Western District — Rifle:* 3rd Volunteer Battalion the Cheshire Regiment: Surgeon-Captain Theodore Fennel. *Western District — Rifle:* 2nd Volunteer Battalion the Prince Alberts (Somersetshire Light infantry): Brigade Surgeon-Lieutenant-Colonel Henry Marcus Kemmis. 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers: Brigade-Surgeon-Lieutenant-Colonel Charles P. Shrimpshire.

ROYAL MILITARY TOURNAMENT.

The organisers of the Royal Military Tournament, says the *Broad Arrow*, have already begun to prepare their plans for 1897. The next pageant is to represent the British Army at the periods of Blenheim, Waterloo, the Crimea, and Tel-el-Kebir. Four men in the uniform of the period will represent each regiment which took part in these campaigns. There will, therefore, be about 400 men in the spectacular piece. The uniform and equipment are to be accurate in every detail.

GLANDERS AT LUCKNOW.

The *Pioneer Mail* reports that glanders had been spreading of late at Lucknow. The disease first broke out in the 16th Lancers and has since extended beyond the lines of that regiment in spite of the efforts to stamp it out.

The reproduction of the portrait, painted by Mr. Sydney Hall, of Surgeon-General Sir Joseph Fayrer, Bart., K.C.S.I. (which portrait was presented to the Army Medical Staff Mess, Netley, by the officers of the Army Medical Staff and Indian Medical Service in July last) is now completed. Copies of the reproduction may be obtained from Franz. Haufstaengl of 16, Pall Mall East, S.W.

THE directors of the Crystal Palace announce that they have decided to hold the Great Triennial Handel Festival, 1897, on the following days:—Grand rehearsal, Friday, June 11th; Messiah, Monday, June 14th; selection from sacred and secular works, Wednesday, June 16th; Israel in Egypt, Friday, June 18th. The following solo artists have been engaged: Madame Albani, Miss Ella Russell, Madame Clara Samuell, and Madame Nordica; Miss Marian McKenzie and Miss Clara Butt; Mr. Edward Lloyd, Mr. Santley, and Mr. Andrew Black.

LITERARY INTELLIGENCE.—In January next the *Scottish Medical and Surgical Journal*, edited by Dr. William Russell of Edinburgh, will make its appearance. This new addition to the periodical literature of the profession is intended by its promoters to be a journal in which Scottish work and teaching in all departments of medicine will be fully represented and with this object in view it will be carried on under the direction of nine medical men, of whom six reside in Edinburgh, two in Aberdeen, and one in Dundee. The published first list of promoters and supporters is a long enumeration of well-known names, but it is rather surprising that Glasgow, which possesses a great university as well as several large hospitals and extra-mural schools and an ancient licensing corporation, is not as yet represented otherwise than by "correspondents."—We recently announced in this column the appearance of two new practical treatises from the publishing house of Mr. W. B. Saunders, Philadelphia—viz., Howell's "Text-book of Physiology" and J. C. Wilson's "Text-book of Applied Therapeutics." We are asked by the Rebman Publishing Company, Limited (11, Adam-street, Strand) to state that they have been appointed the sole agents in this country for both the works in question.

Correspondence.

"Audi alteram partem."

"ELECTION OF DIRECT REPRESENTATIVES TO THE GENERAL MEDICAL COUNCIL."

To the Editors of THE LANCET.

SIRS,—The letter of Dr. James Brassey Brierley commences with an effort to show that the candidates commended by Mr. Colin Campbell for their views on the midwifery question—viz., Mr. Rivington, Dr. Rentoul, Dr. Dolan, and Mr. Brown—whilst promising for the future to oppose the formation of an inferior order of midwifery practitioners, have in the past made proposals concerning the training of obstetric nurses which, if adopted, would "create a large class of inferior and independent practitioners infinitely more dangerous to the public and injurious to the profession than anything yet proposed by lay associations." In proof of this astonishing imputation Dr. Brierley merely quotes the particulars of a scheme which appeared in May last in the *Medical Times and Hospital Gazette*, of which Dr. Bedford Fenwick and Mr. George Brown are the editors. Mr. George Brown has disclaimed concurrence in these views,[1] and on what evidence Dr. Rentoul and Dr. Dolan are associated with them by Dr. Brierley it is impossible to perceive. Yet Dr. Brierley proceeds to praise Dr. Glover and Dr. Woodcock for condemning the scheme and to contrast his favourite trio with Mr. Rivington, Dr. Rentoul, Dr. Dolan, and Mr. Brown as follows: "The position is simply this: Dr. Glover, Dr. Drage, and Dr. Woodcock are determined to deal with and place under efficient medical control a class of mischievous practitioners already existing. The gentlemen whose claims Mr. Colin Campbell advocates have told us and clearly demonstrate by their actions that they mean to create an entirely new order of inferior and half-trained medical practitioners and to employ such as unqualified assistants." It is scarcely credible that any medical man, even in the heat of an election, should make such a statement on the evidence which Dr. Brierley adduces. He rightly surmises that I should not desire to have my name associated with such a programme as he describes; but the injury done by associating me with it throughout the greater part of a long letter is not remedied by his excepting me at the end, for many may not have read the letter through.

I am not careful to reply here to the rest of Dr. Brierley's personal remarks, but as he is a Member of the Royal College of Surgeons of England I may refer him to the appeal issued by my committee,[2] which shows that his ideas are not shared by those who know more of me than he does. I thank him, however, for saying that "my address reads well, but alas!" I cannot say the same of his letter.

In conclusion my real views on the nursing and midwives questions are very simple. To all forms of unqualified practice and to all "mischievous practitioners" I am entirely opposed. I object equally to the legislation promoted by Dr. Woodcock and to the scheme for recognising a class of "mischievous practitioners" by allowing them, even if better trained than at present, to practise under the orders and control of the medical officer of health, subject to the Local Government Board, propounded, as I understand the matter, by Dr. Lovell Drage.[3] Any legislation that might be necessary for the education, examination, certification, and registration of nurses should apply equally to nurses, medical, surgical, and obstetric; but any Bill for this purpose would require the most rigid scrutiny. The issue of unauthorised diplomas or certificates of competency in any branch of practice should be prohibited, certificates being allowed to be granted only to fulfil the educational requirements prescribed by the General Medical Council. I agree with Dr. Glover that poor women must be protected from the ignorance of midwives, but adequate protection cannot be afforded by legalising, under any conditions, the practice of partially educated midwives. The poor are as much entitled as the rich to fully qualified medical attendance, male or female, and this is really recognised and provided for by existing law—the Medical Act and Poor-law Acts,—which require to be more thoroughly carried out. If it costs the country £300,000 to provide fully qualified medical men for the poorer classes the money will be well expended in rescuing 600,000 child-bearing women from the 10,000 to 15,000 independent midwives in England and Wales who, as I have said, are 10,000 to 15,000 too many. The Medical Act of 1886 is a medical charter, and I trust that the profession will join in opposing any violation of the union between medicine, surgery, and midwifery therein effected.

I am, Sirs, yours faithfully,

Wimpole-street, Nov. 3rd, 1896. WALTER RIVINGTON.

[1] THE LANCET, Oct. 31st, 1896, p. 1256.
[2] THE LANCET, Oct. 31st, p. 1254.
[3] Brit. Med. Jour., Oct. 31st, 1896.

To the Editors of THE LANCET.

SIRS,—The approaching election to the General Medical Council will, I hope, be important in this—that the Council will appear for the last time in its present form and with its present imperfect and cramped jurisdiction. Not that I hold for the moment that the Council has failed in any particular in the purposes for which it was created, but because there are so many things, both in the profession and in society, where the two are particularly related, which might advantageously be brought under its direction or submitted to its purview. The tendency of our modern legislation is in the direction of delegating certain provinces of government to certain groups of men. Our county councils, district councils, and parish councils all stand in evidence of this, while the ever-growing and massive business of the realm is reserved for the Imperial Parliament. I do not believe for a moment that Parliament, suitably approached and diligently invoked, would show as much as the usual hesitancy in bestowing upon our profession that morsel of tutelary legislative power which would diminish the heap of present Parliamentary impossibilities by at least one good-sized pebble; while this pebble, when cut into shape, would prove to us, and to the public through us, a precious stone of beauty and value if not of splendour. It is to help in bringing some such result as this about that I ask for the already unpledged support of the general practitioners of England and Wales in the election coming off next month.

I am, Sirs, your obedient servant,

Kenley, Surrey, Nov. 3rd, 1896. E. DIVER.

To the Editors of THE LANCET.

SIRS,—Dr. Brierley must be in desperate straits to help his *protégés* if the only reason he can advance against my claims as a candidate for election as a direct representative is the shadowy one he puts forward for the *second* time in THE LANCET of Oct. 31st—viz., that I am a member of the editorial staff of a journal in which an article appeared some eighteen months ago suggesting a scheme, with which he does not agree, for the registration of nurses who have passed through the usual three years' course of hospital training satisfactorily. It is, I maintain, most unfair to attempt to make a member of the staff of a journal individually responsible for every article which appears in its columns. Dr. Brierley ought to be well acquainted with my personal views as to the registration of midwives and nurses; but if he has any doubts in this matter I hasten to dispel them by stating most emphatically that I am, and always have been, opposed to any scheme of registration which will in the slightest degree encroach on the rights and privileges of medical men. I notice also that Dr. Brierley attempts to make me responsible for a memorandum on the employment of nurses which he has unearthed, and of which he states Dr. Bedford Fenwick is the author. I decline absolutely to accept any responsibility for the views of others, and I must beg of Dr. Brierley that he will discontinue such tactics, which are unworthy of him and are indefensible even during an election contest.

I am, Sirs, yours faithfully,

GEORGE BROWN.

Hart-street, Bloomsbury-square, W.C., Nov. 4th, 1896.

To the Editors of THE LANCET.

SIRS,—Having been asked to publicly give an answer to the question, "What do you consider is the chief question now before the profession in connexion with this election of direct representatives?" I have unhesitatingly answered, "The proposal to legally empower women as midwives to conduct all the normal labours which occur in this country on their sole responsibility without the immediate supervision of a registered practitioner." With the view of

obtaining the true opinions of all the candidates now standing for election to represent medical practitioners upon the General Medical Council I have sent the following questions to each: 1. Will you actively oppose any action, whether taken in Parliament or elsewhere, which has for its object the establishing of an inferior order of midwifery practitioners empowered to conduct, on their sole responsibility and without the immediate supervision of a registered practitioner, even natural labours? 2. Will you urge the General Medical Council to rule it "infamous conduct in a professional respect" whenever any medical practitioner or practitioners (other than those now empowered by the Medical Act, 1886) grant any instrument which professes to empower its holder to practise any part or branch of the practice of midwifery, or of surgery, or of medicine, or of dentistry, and so spuriously qualify either midwives, or bone-setters, or medical herbalists? 3. In default will you urge the General Medical Council to censure such practitioner for the first offence and to graze his name from the Medical Register for two years for a second or subsequent offence? 4. If elected to the General Medical Council will you agree to resign your seat should you change your views upon the above question of the registration of midwives and thus supply the means of testing the opinion of the profession upon this vital question? 5. The Lancashire and Cheshire Branch of the British Medical Association, through Dr. S. Woodcock has adopted a draft "Midwifery Nurses Bill," by which it is proposed (in Clauses 2 and 4) to give, not only all midwives, but also all existing and future midwifery nurses as well, power to conduct, independently of medical practitioners, all natural labours. Will you actively oppose such draft Bill? The following candidates have answered "Yes" to each and all of the above questions: Dr. Alderson, Mr. Brown, Mr. Jackson, Mr. Rivington, and myself. I am glad Dr. Alderson is now absolutely with us, as some time ago his name appeared as one of the "Midwives Bill Committee"—a committee which was established to force on registration. I deeply regret that Dr. Drage, Dr. Dolan, Dr. Glover, and Dr. Woodcock have refused to answer my questions.

I must add that I have asked these questions of all the candidates because I feel that this suggestion to hand over to illiterate midwives the health and lives of pregnant women and infants is a threatened danger to the public health and also to practitioners; because I am myself a voter and can, I trust, influence 2000 voters; because I consider this question of much more importance than the whole thirty seats upon the General Medical Council; because candidates, myself included, should not be ashamed to put their answers in print; because candidates should adopt a *very definite* and *constructive* policy in a profession which is so greatly cut up by petty jealousies; and because I firmly believe that the mode of conducting a popular election like this should in all fair respects follow that of ordinary political elections. I put similar questions to the candidates in the 1891 election and I repeat the process once more. It would be easy for me to adopt the anonymous letter-writer style or to "put up" some other practitioner to ask these questions. I refuse to adopt so degrading a plan. It is my wish, the earnest wish of one who has worked hard since 1890 to prevent the passing of the four Midwives Bills through Parliament, to send three candidates to the General Medical Council pledged *up* and *beyond* the hilt to fight this proposed degradation of our profession, this proposed danger to women and infants, this proposed repeal of the Medical Act, 1886. If voters send those who are opposed to their wishes in spite of all warning they will have themselves to blame.

The silent and stealthy order has been and now is, "Suppress the general practitioner." To gain this end a number of the "leading" practitioners and their lackeys have proposed that 990 of every 1000 confinements shall be taken from the practitioner and handed over to the midwife. To gain this end we have the General Medical Council, the Royal College of Physicians of London, and the Apothecaries Society steadily and persistently refusing to put the penal sections of their Act of Parliament and charters into operation against unqualified persons who practise medicine, while Sir B. W. Richardson has suggested that chemists should be qualified to practise minor medicine and surgery. To gain this end we have hospitals refusing to adopt an honest wage-limit, while some, like Guy's Hospital, pay eight assistant physicians and surgeons each £100 per annum, and where patients who pay threepence per week and sixpence per fortnight obtain medical and surgical treatment and medicines, and so compel outside practitioners to charge threepenny and sixpenny fees. To gain this end the General Medical Council has refused to interfere with these degrading medical aid associations. To gain this end nurses are now lectured and examined in medicine and surgery and are sent out equipped with thermometers, instruments, and books, and encouraged to interfere with and treat our patients; and to gain this contemptible prostitution of a learned profession the order has gone forth that persons other than practitioners are "qualified" to render First Aid to the injured, no matter whether or not a practitioner is near at hand. If general practitioners *will* insist on selling their rights to any of the above, if any of them will insist upon sending to the General Medical Council those who have not shown by years of earnest and unpaid toil, and not made a mere profession of promises, that they are their best and truest representatives, then all I can say is that I hope their cup of degradation has not yet been filled up, and that having themselves elected to lie in the social and political gutter, they will receive that proper mode of treatment which is the true deserts of those who in this country fail to look after their own interests.

I am, Sirs, yours faithfully,

Liverpool, Oct. 28th, 1896. ROBERT R. RENTOUL.

To the Editors of THE LANCET.

SIRS,—Dr. Brassey Brierley favours my letter which appeared in the *British Medical Journal* of Oct. 24th to a lengthy reply in your columns. I submit that this is an unfair method of argument. If a correct verdict is desirable my letter and his reply should be placed before the same body of readers, and no one will deny that many read THE LANCET who never see the *Journal*. Perhaps you will permit me to add that Dr. Brierley has seriously misconstrued my letter. I did not "attempt to justify some candidates," neither did I "condemn" or *presume* to "advise," and all I "support" and "advocate" is that a distinct issue be placed before the profession; in other words, more light. I am interested mostly to interest others and to do my little best to secure a large poll.

I am, Sirs, yours truly,

Saddleworth, Nov. 4th, 1896. COLIN CAMPBELL.

*** We have received a great many letters upon the pending election, for which we have been unable to find room. Correspondents, whether candidates or no, must remember that our space is limited. They are also begged to understand that we are not to be made the vehicle of foolish abuse. Questions to the candidates can be put to the candidates personally. The answers received will be printed when we consider that the profession at large shares the mystification of the inquirer and stands in the same need of enlightenment.—ED. L.

"ULCERATIVE ENDOCARDITIS TREATED WITH ANTI-STREPTOCOCCIC SERUM."

To the Editors of THE LANCET.

SIRS,—I have much pleasure in responding to Dr. Byrom Bramwell's wish for further information in respect of the case reported by me under the above heading in THE LANCET of Oct. 17th. The case has an unusual interest and for this reason I am much obliged for Dr. Bramwell's criticisms. In answer to question 1, as to whether pericarditis with effusion could be excluded, I may say that personally I am satisfied that it could. The case naturally was much examined not only by myself and Dr. Hugh Wingfield, the house physician—the latter a very careful worker—but during the vacation the case came under my colleague, Dr. Walter Carr, whose dictated note on July 19th runs as follows: "Systolic and presystolic murmur at apex; loud systolic over the pulmonary area; marked accentuation of pulmonary second sound." When the patient came in I myself was not able to detect a double murmur, but only a systolic in the mitral area, but on June 25th I made a special note, "Apex bruit distinctly double," though I was not able to place the diastolic bruits as early or late. At no time was a pericarditis suspected by us; the complexion of the case and the symptoms did not raise the suspicion in our minds. Moreover, though recognising, of course, the closeness with

which a pericardial friction sound may simulate an endocardial bruit, yet is not the simulation rather between the former and a double aortic bruit than between the to-and-fro friction sound and a double murmur in the mitral area? As to question 2, the condition of the heart sounds at the end of treatment, on Aug. 17th the serum treatment was begun and on the 23rd the note stands, "Double murmur still heard at the apex"; and on the 26th, "Murmurs softer in character." From this date on the systolic murmur alone was heard at the apex, and the final note on Sept. 21st records, "Soft systolic murmur still faintly heard at apex." To-day, having expressly sent for the patient, I could not hear any murmur at the apex; in the pulmonary area there was a faint systolic bruit. A word as to the cardiac dulness. I have been astonished at the frequency with which in heart cases, especially among women and children, the note is found to be impaired above the third rib along the left border of the sternum. In my experience this is common in the second interspace and not very infrequent under the second rib cartilage; nor is the impairment confined to the immediate neighbourhood of the sternal border, but extends outwards a finger's breadth and more.

By cardiac cases here I mean mitral cases, both of incompetence and obstruction. Dr. Bramwell says: "I presume the cardiac dilatation would be chiefly due to the valvular defect rather than to changes in the cardiac muscle," but I must confess that I had interpreted the case otherwise and had explained the return of the heart to more normal dimensions as due chiefly to a recovery of the heart muscle. The case, it will be noted, was an acute one, the patient coming in on June 22nd and his first symptoms of cardiac discomfort having arisen on June 6th. But to look away from physical signs, how are we to explain a *cardiac* case in which there is an irregular, long-continued pyrexia associated with wasting and cachexia, and the appearance of successive outbreaks of an erythematous eruption, and finally with the discovery of streptococci in the blood? How can we explain such a case otherwise than as a septic cardiac case? Can a pericarditis cover it? I do not see how it can, but if it could it would be none the less septic. From a therapeutic point of view, then, this case of blood-poisoning, whether of endo- or exocardial origin, will belong to the same category, and its treatment will have the same interests; but I conceive that there is no room for doubt as to its endocardial nature.

I am, Sirs, yours faithfully,

Welbeck-street, Nov. 3rd, 1896. HARRINGTON SAINSBURY.

"APPLIED BACTERIOLOGY."

To the Editors of THE LANCET.

SIRS,—Your comment on the little book on "Applied Bacteriology" which Mr. Pearmain and I have just published is so fair that, though I am afraid that in some respects it does the work more than justice, I should like to explain one passage to which your reviewer took exception. The full quotation is: "In waters that have been very copiously contaminated with sewage there is no great difficulty in detecting the typhoid or colon bacillus, if present." No doubt the separation of the typhoid bacillus from the colon may sometimes be troublesome, as, indeed, we state in the account of typhoid on page 147. But I hardly think that the recognition of the one or other organism, as indicating sewage pollution, is likely to present any great difficulties even to students. In most cases, indeed, where we had any doubt as to the practicability of a method we practised it ourselves before describing it in this manual. With both colon and typhoid bacilli we repeatedly used artificially contaminated waters for trying the several methods described, and found no trouble at all with those which we ultimately recommended. I am, Sirs, yours faithfully,

King's College, London, W.C., Nov. 2nd, 1896. C. G. MOOR.

CONGENITAL DISLOCATION OF THE HIPS.

To the Editors of THE LANCET.

SIRS,—The report of a recent meeting of the British Orthopædic Society, which appeared in THE LANCET of Oct. 31st, is not quite correct as regards the description of the cases which I exhibited. These cases were instances of ordinary double congenital dislocation of the hip-joints, and were shown as contrasts to *a quite exceptional case* which I described. The skiagraphs of these ordinary cases exhibit shallow or rudimentary acetabula and malformed heads of the femora, whereas the skiagraph of *the exceptional case* shows well-formed acetabula and perfectly normal heads of the femora. I may add that the skiagraphs only confirm the opinion I formed of this patient's condition ten years ago, when my advice to try reduction under chloroform was not accepted, although the child was then only two years old. I shall shortly publish a full account of this case, but in the meantime shall be glad to correct the impression which may have been formed by anyone reading the report referred to above. I am, Sirs, yours faithfully,

Cavendish-square, W., Nov. 3rd, 1896. NOBLE SMITH.

"POOR ASSISTANT."

To the Editors of THE LANCET.

SIRS,—I have received a letter signed "Poor Assistant," and my correspondent wishes me to reply to him through your columns if you will kindly allow me to do so. "Poor Assistant's" difficulty is one which the Medical Defence Union can readily remove if he will send the full facts to Dr. Bateman, the General Secretary of the Medical Defence Union, addressed to the Offices, 20 and 21, King William-street, Strand, London, W.C.—I am, Sirs, yours faithfully,

Cavendish-square, W., Nov. 3rd, 1896. VICTOR HORSLEY.

WANTED, AN IDENTIFICATION.

To the Editors of THE LANCET.

SIRS,—May I venture to ask you to add to your many acts of mercy yet another, and allow me to appeal to the readers of your valuable journal to help me to recover a missing daughter? My daughter left her home on the 26th ult. and has not since been heard of although I have used all means in my power to trace her. She has evidently got into bad company as when she left home she was well on in pregnancy, and must be confined, if she has not already become a mother.

The following is a description of her:—Age 22, but looks very much younger; dark; height about 4 ft. 7 in.; very pretty, with small features and good figure; sometimes she has a slight divergence in one of her eyes; one of her little fingers is bent inwards, the tendon being contracted. She had a good stock of clothes when she left home and took a large brown canvas trunk with initials L. E. C., but these may have been changed. Her name is Lillie or Lillian. It is not usual, I know, for you to publish such cases, but may I ask you to make an exception in this case and help save a girl from further ruin and a father from an unhappy life? To appeal to the medical profession seems my last chance, as her condition must come before some medical practitioner, if it has not already done so. Should any of your readers think that my description agrees with any person whom they have attended since the 26th ult., or may yet attend, I shall be extremely thankful if they will communicate with yourselves, begging you to forward the communication to me.

I am, Sirs, yours faithfully,

E. C.

*** We consider that the medical man who has attended this case will be justified in revealing the whereabouts of his patient. He will be violating no confidences of a professional character, for the condition of the girl is known to her parents and so is the fact that she has run away. On the other hand, he may possibly save her from a life of shame and earn her gratitude in time to come. We shall be happy to forward any information that we receive immediately to the parents.—ED. L.

"THE MEDICAL SERVICE AT ST. PAUL'S."

To the Editors of THE LANCET.

SIRS,—As one of those invited by the so-called Guild of St. Luke to the late function in St. Paul's Cathedral, described by an anonymous correspondent in THE LANCET of Oct. 31st, will you allow me to state some of my reasons for declining to take part in that proceeding and for withholding my sympathy from the whole movement, of which it is only a feeble expression? It is notorious that the churches have lately begun to assert themselves with unwonted activity, if not effrontery, and the

"reaction against science" which they affect to have discovered is now triumphantly proclaimed in high places. What they desire to bring back is a Saturnian age of ignorance and obscurantism. For half a century the Church of England has been busily coquetting with the Church of Rome; and here, in London, only the other day, was published the "History of the Holy House of Loreto," in which the same audacious miracles so long associated with the legend are unblushingly re-asserted. The Bishop of Stepney, in his sermon at St. Paul's, as reported in the *Times*, professed it to be his object to reconcile religion and science, and to rescue our profession from being lost in the wandering mazes of materialism. But if the worthy prelate were as familiar with science as he doubtless is with religion he would know that the two are absolutely irreconcilable and that a scientific religion would be a contradiction in terms. This was long ago pointed out by George Lewes in his "History of Philosophy," and is the theme of Mr. A. Balfour's "Foundations of Belief" as well as of Mr. Kidd's "Social Evolution." Religion is, as the latter author expresses it, supra-rational. I see that your correspondent quotes, without any adequate sense of its meaning, the trite mediæval proverb, "Ubi tres medici, ibi sunt duo athei." But he may learn from Mr. Lecky that the word atheism in those days was used in the very loosest sense and was applied indiscriminately to disbelievers in witchcraft, apparitions, and similar superstitions. Indeed, Dugald Stewart shows that at one time disbelievers in apostolical succession were commonly denounced as atheists. In a word, it seems to me advisable to let St. Luke abide in the spiritual realm to which he prescriptively belongs; and if we want a mythical name to inscribe upon our professional banners let it be that of our real father, Asklepios, under whose auspices the greatest physicians have been content to walk and fulfil their beneficent mission to mankind.

I am, Sirs, yours faithfully,

Nov. 1st, 1896. TIMEO DANAOS.

SANITATION AT EXETER.

(FROM A SPECIAL CORRESPONDENT.)

THE town of Exeter now suffers from the fact that it was one of the first towns in England to undertake great sanitary measures. After the cholera epidemic of 1832 the idea of building sewers was seriously entertained, and a whole system of drainage was completed in 1846. In those days little or no experience had been acquired in the building of sewers. According to the common error of those times, the sewers built at Exeter were far too large for the purpose. Fortunately the natural fall is, on the whole, favourable; but in the High-street the flow is less than two feet per second, and therefore the High-street sewer cannot be self-cleansing. There are also places where the sewers dip and rise again, thus constituting a sort of elongated syphon where deposits are formed and where stagnation must occur when the flow of sewage is not strong. These sewers once built there was, of course, some difficulty in persuading the inhabitants to connect their houses with them. This work evidently proceeded slowly, as a good many houses remained unconnected even in 1866. The cholera scare of that year facilitated the efforts of the authorities, and they then destroyed about 1000 cesspits. In 1878 the council was able to take another great step. They purchased the waterworks and established a constant-supply system. The water comes from the River Exe and the intake is some four miles above the town. Beyond the intake there are two towns, but their sewage has been diverted and does not fall into the river. The water is drawn from the river through a closed culvert, which, it is claimed, acts as a natural filter. It is then pumped up to the waterworks, where it is again filtered. The supply is not apt to run short in dry seasons, as happens too often when water is derived from springs. The medical officer of health reports that the frequent bacteriological and chemical examinations of the water have proved satisfactory. The present supply is equal to 1,750,000 gallons per day, and the population of Exeter is estimated at 38,000. A proposal is now, however, under consideration for the construction of new filter beds by which the supply would be increased to 2,550,000 gallons daily. A good water-supply having thus been secured the town council proceeded to take measures to prevent this water from being fouled through improper storage within the houses. Seven years ago all householders were called upon to provide separate cisterns for their waterclosets, so that no drinking-water should be taken from these cisterns. Strange to say, this injunction was enforced with great facility. It was not necessary to prosecute anybody. The council held that water coming from closet cisterns could not be considered as a "proper supply" within the meaning of the Public Health Act, and therefore house-owners must provide a separate cistern for their waterclosets. It is a pity that this same rule is not applied in the metropolis, where any number of houses, and especially better-class houses, have but one cistern, which supplies alike the kitchen tap and the flush for the watercloset. The rule enforced in the old houses was naturally applied to the new houses, and no building was sanctioned unless there was a separate cistern for the water-closet. As there have been about 2000 new houses built within the last few years at Exeter, the fact that so many new houses were in good condition in this respect has acted as an example and helped to bring the older houses into line.

The town council adopted the Public Health Act in 1866. Previously the council had been the sanitary authority, but not the road or sewer authority. The latter public services were discharged by a body called the Improvements Commissioners. In 1867 these commissioners were superseded and the town council became the urban sanitary authority. Among other improvements that then ensued it should be noted that thenceforward no private slaughterhouses were licensed. The council determined to gradually abolish private slaughterhouses. It must be confessed that the work was done very gradually. It was only in 1880 that some old gasworks were purchased and converted into a public abattoir. In 1867 there were twenty-six private registered slaughterhouses, and there now still remain eight. Many of the old slaughterhouses were situated in densely crowded areas and there can be no doubt that their abolition has been of great benefit to the health and cleanliness of the town. The retort-house of the old gasworks makes a very lofty, well-aired slaughterhouse for bullocks, and the cattle market is near at hand. The butchers are, on the whole, well satisfied to kill their cattle here, but they would like the building to be divided into compartments so that each butcher might kill privately without being watched by his rivals in the trade. This, however, would defeat the object of the reform. The glare of publicity is the best protection for the public. The caretaker employed by the municipality was formerly a skilled butcher, who in his time has perhaps slaughtered as many cattle as anyone in the town, and is, therefore, considered to possess extensive practical experience. The inspector of nuisances also frequently calls in at the slaughterhouse. At the time of my visit I found the slaughterhouse absolutely free from any sort of bad odour. Large doors and numerous windows and apertures provided ample ventilation and through draughts. The floor was made with cobbles, well cemented. These give a good foothold; but the amount of blood that flows on this floor is very small. It is all carefully collected and is too precious for industrial purposes to be wasted. The entrails are emptied in a large iron vat placed on wheels, so that very little offal or blood reaches the sewer from the slaughterhouse. As a further precaution, however, two small cottages that overlook the slaughterhouse have been purchased by the municipality and will be kept without inhabitants. This measure, intended to better isolate the slaughterhouse, is all the more necessary as it is situated close to the river in a low-lying and poor part of the town.

In this neighbourhood I noticed some very dilapidated and squalid dwellings, but I also noticed that one of the rows of the worst houses stood by itself. A similar row that was built in front and another immediately behind had been pulled down. If the remaining property was poor, it was, in any case, well swept by the wind both in front and behind. The part of the High-street that traverses this district to reach the bridge over the Exe has been artificially raised so as to render the descent to the river less steep and dangerous. One set of lofty houses built against the foundations of the High-street have no back windows for the first three storeys. The upper two or three storeys give on to the High-street. Thus the fourth floor from the low level

becomes the first floor on the High-street, and here there are windows both back and front. The council has decided that these upper floors alone shall be inhabited. The floors below the level of the High-street must in future be used only as storehouses. In dealing with the vexed question of the housing of the poor the council has refused to entertain any vast scheme for sweeping away an insanitary area. It maintains that as Exeter is but a small town it is easier to deal with the worst houses and remove them one by one. Further, what appears to be one of the worst slums of Exeter is, in reality, one of the most picturesque, interesting, and—comparatively speaking—healthy parts of the town. This, the western quarter, is on the steep slope of a rocky hill—so steep, indeed, that the principal street is divided into broad steps. On each side are numerous mediæval houses, with upper floors that project over the street, pointed roofs, gables, odd windows, and picturesque irregularities. Instead of treasuring these old buildings and doing all that was possible to preserve their original beauty, this historical portion of the town has been allowed to decay and is now inhabited by some of the dirtiest and poorest sections of the population. Nature has been kinder than man, for, in spite of the poverty and the overcrowding, this part was especially exempt from cholera in 1832, and has ever since been exceptionally free from infectious diseases. The fact is that the same phenomena obtain here as at the Altona district of Hamburg, which has always, in 1832 as in 1892, been free from cholera. The hill faces south and west. There are a natural ventilation, a full exposure to the purifying effects of the sun's rays, a prompt and complete natural drainage of surface waters, and a rocky soil which prevents infiltration. Hence this old quarter of Exeter escapes epidemics just as Altona, likewise built on a rock, escaped cholera during not one but all of the great epidemics. Under these exceptionally favourable circumstances there is no sufficient reason for pulling down old, historical and beautiful houses. Too many of these have already been ruthlessly destroyed and can never be replaced. Some modern jerry-built houses might with advantage be swept away, but houses that are several centuries old will generally be found in a more solid and durable condition than the flimsy structures of the modern speculative builder. It is only necessary to introduce modern sanitary appliances and drains into these old dwellings, and, by reason of their stouter walls, better construction, and greater freedom from damp, they will become more wholesome dwellings than many which have been erected quite recently. The interests of history and art need not be sacrificed to the exigencies of sanitation. On the contrary, the sanitary reformer would wish modern builders to revert to the honest, sound, substantial work of older days. It is, therefore, with some satisfaction that I record the fact that the town council is not desirous of sweeping away this old district with its antique dwellings, so that it may be replaced by so-called model—but what are in reality too often jerry-built and intensely ugly—artisan dwellings. A company did build at Exeter a block of industrial dwellings containing ninety-eight separate tenements let out at from six shillings to one shilling per week, but the class of tenants for whom this block was intended did not go there, consequently the building is not fully inhabited. The fact is that rents are very low at Exeter and the town is so small that it is no great inconvenience for the poorer classes to live in the outskirts. There is no urgent necessity, therefore, to pull down the mediæval houses that still remain in the centre of the town. Five-roomed houses with a bathroom can be obtained for £12 a year. In the vicinity new four-roomed houses with outbuildings can be leased for £9 a year. These all have properly flushed closets, and the Exeter working man expects to have a bathroom in the house he rents. By building extensively on the outskirts the congestion in the centre of the town has been relieved to some extent, though the process is certainly very slow. Thus according to the census of 1861 there were at that time 6·26 inhabitants for every house. In 1871 the proportion was 5·88, in 1881 it was 5·69, and in 1891 the average was 5·33. The reduction, therefore, in the thirty years is equal to nearly one-sixth. There is still need of considerable improvement, but the building of new streets and houses continues, and it rests with the sanitary authorities by constant interference and supervision to reduce the population of the old houses.

The Exeter town council claims that it exercises a better control over the poor of the town by combining the functions of Poor-law medical officer with those of medical officer of health. The chief medical officer of the workhouse is also the medical officer of health. The three assistant Poor-law medical officers are also assistant medical officers of health. By combining the salaries paid the services of a better class of medical men can be obtained, and as the parish medical officer must go among the extreme poor he is able to detect the first outbreak of epidemic disease or other insanitary conditions with which as medical officer of health he can deal promptly. The four medical men attached to the Poor-law and sanitary services take it in turn to attend for one month at the fever hospital. The theory is that by dividing the work connected with the three public services between four medical officers it leaves to each time enough to attend to private practice. They are also supposed to acquire more than usual experience in the treatment of infectious disease because they have to attend for one month out of four at the isolation hospital. Such, in any case, is the theory and it seems to work, at least to the satisfaction of the town council. Nevertheless, the old arguments against the mixing up of the interests of private practice with those of the maintenance of public health still hold good. Exeter is a town of sufficient size and importance to engage the services of a medical officer of health whose time should be exclusively devoted to the fulfilment of his public duties.

That there is still much sanitary work to do is set forth by the fact that the death-rate is high. Last year, it is true, it amounted to only 17·47 per 1000, but then the death-rate for England and Wales was 18·7, and for the thirty-three large towns 20·7; or, what is more to the point, it was equal to an average of 18·6 for the sixty-seven large towns in which Exeter is included. But this was an altogether exceptional year. In 1894 the death-rate at Exeter was equal to 20·63, though the death-rate for England and Wales was only 16·6. The average death-rate for the previous ten years was 21·3 per 1000, which is certainly too high for a small town like Exeter, where so many of the advantages of a country life can be enjoyed.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday.

THE proceeds of the annual collections at the places of worship in the city this year go to the Queen's Hospital. Up to the time of writing the amount received reaches the total of £4809 13*s.* 10*d.*, a sum which will materially help the funds of this deserving institution.

Food Adulteration.

The Health Committee have directed their attention with laudable zeal to the question of the adulteration of food with boracic acid. Some recent prosecutions against the use of this ingredient in milk have shown that it cannot be legally used for the purpose of preservation of milk. The city analyst, Dr. Hill, has shown that the amount of boracic acid in butter was from fifteen to twenty grains in the pound. The whole question of the use of boracic acid and salicylic acid as preservatives of food is one of much importance—they are largely used in many articles of diet, such as ham, bacon, fish, milk, butter, wines, &c., and no doubt with the consumption of such foods an amount may be taken daily which may be productive of injury to health and digestion. Any attempt to interfere with the purity of, or to disguise, these common articles of everyday use is an infringement of the law and deserves all the consideration which the Health Committee can bring to bear upon the matter. On the subject of the adulteration of sweetmeats with paraffin wax four wholesale manufacturers interviewed the magistrates recently. Two were fined £5 and costs, one costs alone, and the fourth 40*s.* and costs. Some protection is thus afforded to the stomachs of the young and information elicited for the guidance of the public as to the deleterious nature of such attractive morsels.

Midland Medical Society.

At the inaugural meeting of this society on Oct. 29th an address was delivered by Sir William Broadbent entitled "Clinical Obiter Dicta." There was a large gathering of medical men, who listened with much interest to the outcome

of the practical experience of the lecturer, to whom a cordial vote of thanks was passed.

The Need of Education.

The appalling ignorance and indifference occasionally met with in the matter of feeding the young points to some want of instruction in the matter of diet. An example of recklessness in this particular was lately the subject of an inquiry by the coroner. A boy aged ten years having been to an afternoon performance at a local theatre was put into a tram to go home. A glass of port wine was given to him when he started by his father. On his way the boy purchased a cocoanut and some chestnuts, of which he ate freely. His tea on arriving home consisted of cocoa, bread and butter, and tinned lobster and he finished up with more cocoanut and chestnuts. The result was constipation, twisting of the intestine, and death—a climax not to be wondered at.

Nov. 3rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Demolition of Insanitary Property and Improvement at City Baths.

MR. R. WALTON, Local Government Board inspector, held an inquiry on the 30th ult. at the municipal offices relative to the application by the Corporation to borrow £50,000 for the purchase and demolition of insanitary property, and £18,675 for the purpose of public baths and washhouses. Dr. Hope, the medical officer of health, said that the property as scheduled was not only that which was in the most ruinous state of dilapidation and of the worst and most vicious construction, but was also that in which the highest death-rate occurred and the greatest amount of certain forms of infectious sickness was found to exist. The property included in the present application was situated in seven different districts, comprising the north, south, and centre of the city. The death-rates for the last three years based upon a special census to secure accuracy varied from 30 per 1000 in the district of the south end, where there was some shockingly bad property, up to as high as 79·6 per 1000 in the north end. Besides these circumstances they would have to record what too often happens—a frequent recurrence of typhus fever was constantly taking place in these districts. There were no fewer than forty-seven cases of this disease within the current year taken out of the streets included in the present report. The mischief, of course, did not end in these streets. It spread from there to better ones. It had been traced into a number of other streets. The general health of the inhabitants was naturally very low, as the high death-rate would indicate. The sanitary condition of the houses was very defective and the people had no chance of leading a wholesome life. Some of the 1500 houses vacant in these districts were little better than those proposed to be demolished. It was very remarkable that, considering the constant process of demolishing insanitary property and displacing large populations, overcrowding was not on the increase. It was, in fact, diminishing, and the number of convictions for overcrowding was lessening year by year. At the same time inspection was much more close and the conditions more exacting, as a greater cubic space was now required in sub-let houses. The property proposed to be demolished was neglected by the owners and was defective in every particular. In reference to the application to borrow money for the purpose of public baths it is proposed to supply Westminster-road baths and Burlington-street open-air baths with hot salt water brought through a main from the Liverpool Cold Storage Company's premises, where the hot salt water would be pumped by a pump which the corporation intended to erect there. The company could supply about 200,000 gallons of hot salt water per twenty-four hours. The water would not be transmitted directly, but first of all lodged in suitable tanks in Bevington-hill, whence it would flow to the baths by gravitation. This scheme would cost about £6500. In connexion with further applications for power to borrow money to improve the sanitary arrangements of two other public baths and washhouses, it appears that the system of washing clothes at these washhouses was said to be very antiquated. the drying apparatus generating such a high temperature—180° F.—that the women engaged there frequently fainted. The idea was to re-arrange the whole system and to improve the sanitary condition of the baths.

New Hospital for Phthisis.

A public meeting was held at the town hall on the 2nd inst., under the presidency of the Lord Mayor, in support of the scheme for building a new hospital for phthisis. The building which has done duty as a hospital for some years consisted originally of two dwelling houses providing forty beds. This institution is now found to be too small for its requirements. The committee have had a plan before them, devised by their architect, of rebuilding the hospital on its present site in Mount Pleasant, the wards being so arranged as to receive the full benefit of the sunshine. The new hospital is estimated to cost £50,000, and will contain seventy-six beds. It is proposed that the cost of building shall not exceed £22,800, the remaining £27,200 to be expended on furnishing the hospital and endowing twenty-five beds. It is to be sincerely desired that the committee will see their way to build the new hospital in a more salubrious atmosphere than can be had in its present situation. That there is a prospect of attaining this desirable end is indicated by the speeches of the Lord Mayor and of Mr. William Rathbone (the president of the hospital), both of whom laid stress on the importance of fresh country air as an absolute necessity in the treatment of phthisis. It is interesting to see that of £16,774 already promised towards the required £50,000 no less than £11,000 had been contributed by the committee themselves.

Health of Liverpool and Corporation Hospital Accommodation.

In a memorandum submitted to the City Council by the chairman of the Port Sanitary and Hospitals Committee it will be seen that the total number of beds available in the Corporation hospitals amounts to 540. This number is to provide for the requirements of a city containing 650,000 inhabitants, in addition to which is a large emigration population of 200,000, some of whom are not unfrequently unable to proceed on their journey owing to infectious diseases, and, in consequence, require removal to the Corporation hospitals. The Local Government Board advise the provision of one bed per 1000 of the population, exclusively of accommodation for cases of small-pox; so that if it be assumed that 100 beds are set aside for small-pox there only remain 450 for general requirements. An additional fifty beds will shortly be available at Netherfield-road. At the present time all the available accommodation for scarlet fever is taken up, and, what is still more serious, almost every available bed for typhus fever is also occupied, and accommodation for some of these cases has only been found by encroaching upon wards which ought properly to be set aside for small-pox. At the present time the trade of the port is liable to be influenced by the presence to any considerable extent of the more serious forms of zymotic disease. Some of the consuls receive every week a statement on the matter, and the increase of any one of the more serious forms of infectious sickness is at once the subject of inquiry and correspondence. The following shows the number of cases reported and the number of cases removed to hospital during each of the last three years:—1894: 6232 cases; 2766 removed to hospital. 1895: 4641 cases; 2128 removed to hospital. 1896 (to Sept. 30th): 3895 cases; 1820 removed to hospital. The chairman of the health committee, in his review of the city during the past year, also says that the gradual improvement in recent years in the health of the city has been well maintained during the first nine months of the present year, the general death-rate for the whole city during that period being 22·5 per 1000, as compared with 25·4 per 1000 during 1895. This improvement was apparent in each of the wards of the city, and adverting first to the former city area, exclusively of the recently incorporated districts, it was gratifying to notice a decrease in the general death-rate to 24·5, as against 25·6 per 1000, the average of the previous ten years. The city during the period referred to had been free from small-pox with the exception of 2 cases, 1 being introduced into the city overland and the other arriving by sea from Constantinople. Both cases were isolated in hospital, and the precautions adopted prevented any extension of the disease. The number of cases of typhoid fever reported were 867, and represent a diminution of 73 on the number of cases reported during the same period of last year. Scarlet fever had shown some increase during the past two or three months, but the type, fortunately, had been a mild one, and

there were now signs which justified the expectation of a decline of the disease. Typhus fever still appeared upon the records to a larger extent than was altogether satisfactory, notwithstanding incessant efforts to induce the class amongst whom it prevailed to observe ordinary cleanliness. During the summer months a considerable number of streets were specially washed. This course was from a sanitary point of view extremely beneficial and it might be hoped that the system would be largely extended in future years. An unstinted supply of water was still urgently called for in connexion with public and private conveniences, and a very much freer use was desirable in the public baths of the city. The rate of mortality in the incorporated areas had fallen to 14 per 1000, as against 15·2 per 1000 in the preceding year. The birth-rate for the whole city was 32·2 per 1000. Singularly enough, the older parts recorded a much higher rate—namely, 36·7—than the incorporated areas, which was only 25·2, and this circumstance exercised a most important influence upon the general death-rate. The subjoined table represents the mortality in the whole of Liverpool from the five principal zymotic diseases during the first nine months of 1896, and in comparison with it are placed the figures of the corresponding period of the previous year:—

	1895	1896
Small-pox	13	—
Typhus fever...	17	26
Typhoid fever	140	107
Scarlet fever	119	123
Diarrhœa	916	779
Nov. 3rd.	1205	1035

WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Gloucestershire County Council on Vaccination.

THE report of the committee whose duty it is to deal with the reports of the various medical officers of the county was presented at the last meeting of the Gloucestershire County Council. It deals with reports made to the forty-one sanitary authorities by their medical officers and sanitary inspectors at their March quarterly meetings for the twelve months ending December, 1895. The vital statistics of the forty-one districts are as follows: birth-rate per 1000, 26·69; general death-rate, 15·47; infant mortality under one year per 1000 born, 123·6. In 1894 the birth-rate was 25·93 and the general death-rate 13·63. The report also refers to the epidemic at Gloucester and states that Dr. Bond, in conjunction with other medical men, has done a noble service in bringing home to the people the value of the protection which Jenner's discovery has afforded to those who availed themselves of it, and adds: "The experience which has been gained in dealing with this subject is that universal and efficient vaccination and re-vaccination is the only protection available against a threatened epidemic of small-pox, and that boards of guardians are entirely inefficient bodies to be entrusted with such a duty as the administration of the Vaccination Acts." A letter was read from Dr. Ancrum resigning his position of alderman for the county owing to continued ill-health, whereupon the chairman, Sir John Dorington, Bart., M.P., remarked that both the council and the quarter sessions were indebted to Dr. Ancrum for the many years of useful service he had given to the county.

The Small-pox Epidemic at Gloucester.

At the meeting of the Gloucester city council held on Oct. 27th it was stated that the expenditure entailed by the recent small-pox epidemic was £15,000 and the expedient was adopted of spreading the repayment of the same over a period of four years.

The Somerset County Council.

At the quarterly meeting of the Somerset county council held on Oct. 20th the sanitary committee of the council stated that twenty-five cases of river pollution had been reported in the county, of which seventeen were caused by local authorities and eight by manufacturers. An injunction had been obtained against the Yeovil town council. The visiting committee of the Somerset and Bath Lunatic Asylum reported that the number of patients on the books, including those boarded out in other asylums, was 1099 (609 females and 490 males). A contract had been entered into, at a cost of £3000, for installing the electric light in the new asylum at Cotford.

The Bridgwater Infirmary.

The annual sermon in aid of the Bridgwater Infirmary was preached at St. Mary's Church on Oct. 25th by the Bishop of Bath and Wells. On the invitation of the mayor the magistrates, members of the corporation, and a large number of the principal inhabitants accompanied his worship in "state" procession. There was a crowded congregation, an admirable and appropriate discourse was delivered by the Bishop, and the offertory was a record one. The annual meeting of the institution was held on Oct. 26th, under the presidency of Lord Clifford. The secretary's report showed a larger number of patients and also an increased income as compared with the previous year. Much regret was expressed by the committee at the resignation of Mr. Washington Winterbotham, J.P., M.B. Lond., M.R.C.S. Eng., who had been a member of the honorary staff for a period of thirty-three years. There were three candidates for the appointment thus rendered vacant, and on a ballot being taken Mr. Kerr Pringle, M.B., C.M. Edin., was elected.

Carmarthenshire County Council.

At the meeting of the Carmarthenshire county council held on Oct. 28th Sir J. Hills-Johnes moved that a consulting medical officer be appointed for the whole county. He said that at present voluminous reports were sent to the Public Health Committee by the district medical officer, but as there was no one responsible to supervise them they were useless. Mr. Howell Reed, J.P., M.R.C.S. Eng., L.R.C.P. Lond., in supporting this said he should have liked to have had a county medical officer pure and simple and not one for consultation only. Unfortunately after a long discussion the motion was rejected by a large majority.

Pauperism in Carmarthen.

The Local Government Board inspector, in his address to the guardians of the Carmarthen Union on Oct. 31st, said that it was a deplorable fact that in some of the parishes of the Carmarthen Union one person in every twenty was a pauper and actually in a few parishes 70 per cent. were paupers. In Carmarthen town, where there was a great deal of charity, about 500 of the 9000 people were on the pauper list.

Vegetarian Meeting in Bristol.

The autumn congress of the Vegetarian Federal Union was held in Bristol last week, when a number of papers on different aspects of vegetarianism were read and discussed. The chairman in his speech said that at present the medical profession were against them, but he believed that in time this opposition would cease and the medical man would no longer say that there was strength in beef or mutton or beef-tea, as they used to say there was strength in brandy.

Bristol Medicals v. Cardiff Medicals at Football.

This match between the above clubs was played under Rugby rules on the Clifton (Bristol) ground on Oct. 28th and resulted in a win for the home team by a try to *nil*. The Bristol Medicals were unable to play their full strength as two of their players were away representing the county of Gloucester at Moseley (Worcestershire).

Lifeboat Saturday in Bristol.

In deference to the wish of the public the committee decided to have no street collection this year in aid of the lifeboat funds. Oct. 24th, which was observed as Lifeboat Saturday in Bristol, was therefore somewhat less in evidence than in the previous years, but it is hoped that this will not reduce the amount collected and sent to the honorary secretary and treasurer. The result of the collections made in 1894 and 1895 was that nearly £2000 was remitted to the National Institution.

Lunacy in Herefordshire.

At a meeting of the Ross Board of Guardians held on Oct. 22nd a letter was read from the clerk of the Hereford Asylum Committee stating that a resolution had been passed to close the asylum for all patients until a vacancy occurred. The clerk had since written to the Gloucester Asylum Committee inquiring if they could take patients from the Ross district.

Hospital Sunday in Plymouth and District.

On Oct. 25th the annual collection on behalf of the South

Devon and East Cornwall Hospital was made in most of the churches and chapels of the "Three Towns," as well as throughout the South Devon and East Cornwall districts. During the past twelve months 1152 in-patients have been admitted and 2274 out-patients treated. The expenditure last year was £6468, and as the income from investments amounted to £1162, a large amount is needed from voluntary contributions. During the last two or three years the Sunday collections have decreased, and last year only £791 was realised, whereas ten years ago £973 was subscribed. It is hoped that this year's appeal may result in an aggregate collection of over £1000.

Barras Head, Cornwall.

The appeal from the National Trust for Places of Historic Interest or Natural Beauty on behalf of Barras Head has been most successful, subscriptions having come in freely, some even arriving from America, and at present only about £60 more are required to purchase the headland and so preserve it from the jerry-builder. It is confidently thought that this small amount will be raised. Many visitors to Cornwall know the beauty and grandeur of Barras Head and that it almost adjoins King Arthur's Castle. It is satisfactory to know that its primitive charm is likely to be preserved.

Nov. 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

General Council of the University of Edinburgh.

THE statutory half-yearly meeting of this body was held in the examination hall of the University on Friday of last week. Principal Sir William Muir occupied the chair, and there was but a small attendance of members, this being no doubt the result of the absence of any matters of importance on the programme of business. The committee on ordinances dealt with the draft ordinance regulating the B.Sc. degree. This ordinance proposes to allow candidates for the B.Sc. degree in pure science, in agriculture, and in public health to take the examination in mathematics on the lower standard provided that they undergo examination in an additional modern language as a fifth subject. The ordinance was approved by the committee, but they objected to the constitution of the Joint Board of Examiners and recommended that the report be transmitted to the Commissioners. The report points out that the Joint Board of Examiners had shown a mistaken zeal in placing the standard of the preliminary examination too high and in failing to give due notice or to allow sufficient time for preparation to the secondary schools, from which the students are mainly drawn. This is considered to have been mainly responsible for the decline in the number of students entering the University during recent years, a decline which, though now diminishing, had caused serious anxiety and some alarm. The committee further criticise the constitution of the Joint Board and point out that as a body it is not subject to the supervision or control of any university authority. The result is that however extravagant may be the demands which it makes there is no superior power to call it to account or to redress the injury which it may inflict. The committee concludes that it is highly inexpedient as well as anomalous that such an irresponsible body should have the power of practically closing without appeal the gates of the University against students entering for graduation who may be reasonably supposed to be fit to attend the qualifying classes. This matter, in their opinion, calls for the intervention of the commissioners. The committee also report on a draft ordinance in medicine supplementary to preceding ordinances. The ordinances modified by the new draft ordinance required that the entire preliminary examination in medicine should be passed at one and the same time. The commissioners having ascertained that the General Medical Council considers that this condition should be no longer in force, the draft ordinance proposes that "a candidate shall be obliged to pass in all the required subjects at one or not more than two examinations, provided that he may offer himself for re-examination as often as may be necessary to satisfy this condition."

Glasgow University.

The election to the office of Lord Rector was conducted on the 31st ult. and resulted in placing the Right Hon. Joseph Chamberlain, M.P., at the top of the poll. Mr. Chamberlain had a majority of 234 votes over his opponent, Mr. Augustin Birrell, M.P. The voting, according to time-honoured custom, was by nations, and Mr. Chamberlain succeeded in gaining a clear majority in each nation. This is an almost unprecedented event, the "Natio Transforthana" having been long an impregnable stronghold of the Liberals. The usual manifestations of youthful exuberance were indulged in by the students, and in the evening a torchlight procession paraded the principal streets of the city. Succeeding this was a somewhat unfortunate occurrence. The students in a body proceeded to one of the music-halls, but were for some reason or other refused admission. Some dispute appears to have taken place, and one of the officials of the theatre turned the fire hose on the students. This was followed by a condition approaching riot. The students, getting apples, potatoes, and other missiles from neighbouring shops, made an attack on the theatre and broke a large number of windows. The police were called in to quell the disturbance and in the end arrested eight of the students. These were brought before the police magistrate on the 2nd inst. and the case adjourned for a week. One welcome fact in connexion with the Rectorial election was the re-appearance of Principal Caird after his long illness. The Principal also presided at the recent meeting of the General Council of the University, when the welcome and congratulations of the graduates were offered to him by Sir John Neilson Cuthbertson. The only business of medical interest transacted by the Council was a discussion on the ordinance under which the medical preliminary examination can now be passed in two departments instead of at a single sitting, and the appointment of a committee to consider the regulations under which honours are conferred in connexion with the M.D. degree. Mr. W. E. Phillip, senior assistant to the Professor of Mathematics, has been elected to a Fellowship at Clare College, Cambridge. Professor William Smart delivered his inaugural address on being appointed to the chair of Political Economy on the 2nd inst.; his subject was "Adam Smith and Liberty."

Western Infirmary, Glasgow.

Mr. T. Kennedy Dalziel, M.B. Edin., and Mr. J. H. Nicoll, M.B. Glasg., have been promoted from dispensary surgeons to be assistant surgeons to the hospital. Mr. Andrew Moyes, M.B. Glasg., has resigned his position as assistant dispensary surgeon. These changes leave three vacancies in the surgical staff of the dispensary, and for these a number of candidates are already in the field.

Glasgow Cancer Hospital.

Mr. Duncan Macartney, M.A., M.D. Glasg., has been appointed one of the surgeons, and Mr. Geo. Burnside Buchanan, B.A., M.B. Glasg., assistant surgeon to the hospital.

Glasgow Obstetrical and Gynæcological Society.

The following are the office-bearers for session 1896–97:—Hon. President, Professor A. R. Simpson, Edinburgh; President, Malcolm Black, M.D.; Vice-presidents, J. Nigel Stark, M.B., and Alexander Miller, L.R.C.P. Edin.; treasurer, John Lindsay, M.B.; secretary, Robert Jardine, M.D.; reporting secretary, A. W. Russell, M.B.; pathologist, J. Munro Kerr, M.B.; councillors, T. W. Jenkins, M.D., A. R. Gunn, M.B., H. C. Reid, M.B., A. Richmond, M.D., G. Balfour Marshall, M.D., and Alice M'Laren, M.D.

Faculty of Physicians and Surgeons, Glasgow.

At a meeting of the Faculty on the 2nd inst. the following appointments were unanimously made:—President, Dr. Bruce Goff; visitor, Dr. Hector C. Cameron; honorary librarian, Dr. James Finlayson; honorary treasurer, Dr. J. D. Maclaren. In the board of examiners most of the retiring members were re-appointed, but the following are new appointments: Geo. S. Middleton, M.A., M.D. Glasg., in Medicine; Henry E. Clark, M.R.C.S. Eng., in Surgery; R. M. Buchanan, M.B. Glasg., in Forensic Medicine; and Campbell Black, M.D. Glasg., in Physiology.

Important Public Health Case.

A somewhat interesting decision under the Public Health Act has recently been delivered at Kilmarnock by Sheriff Hall. The defendant is the owner of a house in Saltcoats, which he occupies in winter, but during the summer months lets to visitors. In July last one of the visitors contracted enteric fever and remained in the house until the end of

August. He was then served with a notice by the sanitary authorities requiring him to disinfect the house, but he disregarded this and left for Glasgow. The owner thereupon refuses to occupy the house, claiming that the authorities should have compelled the summer visitor to have disinfected it. To this the authorities respond by an action in the Sheriff's Court asking that the owner of the house be compelled to admit the medical officer and the sanitary inspector to the house on the ground that there exists a nuisance within the meaning of the statute. The Sheriff has assented to this, dismissing the pleas of the owner (1) that the house is not an inhabited house, (2) that he is not the occupier, and (3) that the sanitary authorities, having elected in the first instance to proceed against the summer tenant, are not now entitled to change their line of action and proceed against the owner.

New Marine Laboratory at St. Andrews.

The new marine laboratory presented to the University by Mr. Chas. Gatty, LL.D., was formally opened on the 30th ult. by Lord Reay. The ceremony was attended by representatives from various universities and scientific bodies, and addresses were delivered by Lord Reay, Sir William Henry Flower, Professor McIntosh, and Principal Donaldson. At the same time the University conferred the degree of LL.D. upon the following gentlemen:—Sir William Henry Flower, London; Professor Michael Foster, London; Rev. Dr. Henry Baker Tristram, Canon of Durham; and Gustave Gilson, D.Sc., professor of natural history, Louvain, Belgium.

Scottish Volunteer Medical Officers' Association.

This association has been formed to promote the interests and improve the organisation and efficiency of the volunteer medical service in Scotland. At a recent meeting the following office-bearers were appointed:—President: Brigade-Surgeon-Lieutenant-Colonel James Dunlop; Vice-President, Surgeon-Lieutenant-Colonel Goff; Treasurer: Surgeon-Captain A. K. Chalmers; Secretary: Surgeon-Captain James Swanson. These office-bearers are to act with a council representing the various Scottish volunteer districts.

University of Aberdeen Students' Union.

The net result of the first year's operations is to add £165 to the funds of the union. The election of office-bearers took place last Saturday.

Aberdeen City Hospital.

Cases of measles and whooping-cough continue to increase in the city. Thirty-one cases were removed to the City Hospital last week, and the question of a further extension of the hospital has been discussed by several of the candidates at the present municipal election.

Nov. 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Inauguration of the Medical Session.

THE practice of marking the commencement of the session at the medical schools and hospitals by the delivery of an inaugural address has fallen more or less into disuse in Dublin. On this occasion the addresses have been few, but of more than average interest. Mr. William Thomson, the President, made a speech at the Royal College of Surgeons in Ireland which was listened to by a large audience and which will doubtless be read by a still larger. In alluding to the examinations which medical students are obliged to pass he commented strongly on the inefficiency of the preliminary test examination, more especially as regards knowledge of the English language and composition, and quoted Mr. Pridgin Teale's suggestion made recently at a meeting of the General Medical Council, that there should be a formal investigation into the number of rejections at all the professional examinations. In giving advice to the students commencing their medical studies Mr. Thomson strongly advised them to learn shorthand and to join the society of Medical Phonographers under the presidency of Dr. Gowers. At the Meath Hospital Mr. Glasgow Patteson delivered a very practical address on Surgical Cleanliness and Handicraft, which has just been published in pamphlet form by Falconer and Co. Dr. McHugh's address at St. Vincent's Hospital dealt with the important subject of isolation in infectious fevers and was an eloquent plea in favour of the adoption of scientific methods to prevent the spread of such diseases.

The Royal Academy of Medicine.

The annual election of officers took place on Oct. 30th. The ballot was very large, no less than 116 Fellows of the Academy having attended to record their votes. This was, of course, largely due to the keenly contested struggle for the post of general secretary, recently resigned by Mr. Thomson. Mr. J. B. Story, who has held the office of secretary to the Pathological Section, and who has taken an active interest in the affairs of the Academy ever since its foundation, was elected. There were but few other changes. Dr. James Little retains the position of President of the Academy, while Mr. Thomson, as President of the Royal College of Surgeons in Ireland, and Dr. G. F. Duffey, as President of the Royal College of Physicians of Ireland, become *ex-officio* Presidents of the surgical and medical sections respectively.

Irish Workhouses.

The whole question of the workhouse system as it exists in Ireland is at present being very much discussed. Since they were established in that country the population, principally among the class for whom these institutions were intended, is less by 3,000,000. Further, there is a deep-rooted dislike among the poor to enter them. Taking a large county like Antrim, and leaving out of account Belfast, there are six workhouses which were built to accommodate about 5000 persons, while at present there are not 1000 in them—that is, less than one-fifth of what they could hold. It is remarkable that while the number of inmates in the Irish workhouses is less than one-fourth of what it was in 1851, and about one-third of what they could accommodate, yet the establishment charges have largely increased. In 1861 the salaries of officers were £94,443, while in 1892 these salaries had reached £136,379; while the total expenditure in 1858 was £550,000, it now, with a largely reduced population, exceeds £1,250,000. The whole system of poor-rates requires to be closely inquired into, and probably the best way to lessen this tremendous expenditure would be in the direction of the amalgamation of our workhouses. The question may be fairly asked why keep up piles of buildings fully officered for so few inmates? The workhouses which would be emptied in this way might be utilised for asylums, barracks, schools, factories, &c. Many people think if the hospitals were reserved one half of the workhouses might be got rid of. The Poor-law system in Ireland is in a most unsatisfactory condition, there being no relationship between what the really needy get for relief and what the unfortunate taxpayers are compelled to contribute.

The Marquis of Dufferin and Ava.

The Marquis of Dufferin and Ava received a most cordial welcome last week on his home-coming after retiring from the Diplomatic Service. The Lord Mayor of Belfast gave a magnificent banquet in his honour as well as that of the Marchioness, and the Harbour Commissioners and Chamber of Commerce also entertained them. Frequent allusions were made to the successful efforts initiated by the Marchioness (during her husband's Indian Governor-Generalship) to introduce proper medical attendance by means of lady practitioners into the homes of the Indian women, and at the banquet, in replying to the toast of her health, Lord Dufferin said she had established a system of female medical practitioners and assisted female education in the art of medicine in a way which had proved an extraordinary practical success, so much so that during the last year over two millions of Indian women have profited by the movement she inaugurated.

Death of Mr. Frederick E. Beck, F.R.C.P. Edin.

I regret to announce the death of this well-known member of the medical profession in Belfast, which occurred on Oct. 31st. Mr. Beck had a very serious illness two years ago, from which he never fully recovered, and although he was able to do his work he suffered from a weak heart. He died after about two weeks' illness from gastro-enteritis. Mr. Beck, who was born in Belfast, was a son of a well-known member of the medical profession in that city who died a few years ago. As a boy he studied at Queen's College, and after qualifying as a Licentiate of the Royal College of Surgeons of Edinburgh in 1867 he started practice in Belfast, where he had a very large *clientèle*, and was highly valued for his medical opinion and for his great kindness as a friend. He was honorary treasurer of the Belfast Branch of the Royal Medical Benevolent Fund of Ireland and took the warmest interest in the affairs of this society; he was also honorary physician

to the Belfast Benevolent Society of St. Andrew and acted as President for one year. Mr. Beck, who was only fifty-two years of age at the time of his decease, was very greatly respected both by his patients and by the public. He leaves a widow and a family of eight children.

North of Ireland Branch of the British Medical Association.

At the autumn meeting, held on Oct. 29th, the incoming President (Professor Whitla, M.D.R.U.I.) delivered a very interesting address on Antitoxin Therapeutics, and Dr. Lorrain Smith gave a demonstration of the Diphtheritic Bacillus in connexion with the address. Communications on medical subjects were also brought forward by Dr. H. O'Neill, Dr. Darling, Professor Sinclair, Dr. Calwell, Mr. Hogg, Dr. Fraser, Dr. Thompson (Omagh), Dr. St. Clair Boyd, and Dr. MacCormac.

The Battle of the Clubs at Cork.

A case has been heard before the Recorder of Cork which throws a side-light on the club fight. A firm of drapers applied for a committal order for debt, their claim being for £10 against one of the medical men imported here by the clubs. In the course of the evidence it was stated that the luckless medical officer to Oddfellows' and Foresters' clubs is in receipt of about £150 or £160 a year. Out of that sum he is obliged to supply the numerous members and their families with medicine. It also appeared that his income from private practice did not amount to more than £20 a year. It was further stated that he has a wife and three children, that he employed two servants, and paid £60 a year in rent and taxes. Under the circumstances it was obvious no course was open to the Recorder but to refuse the committal order. It is pitiable to see any member of the profession in such a position, and the story should not be encouraging to others disposed to come to the rescue of the Cork clubs. At the beginning of the fight some of the club orators boasted that, like the magicians of old, they need only wave a wand to procure thousands of pounds for carrying on the fight with the Cork medical men. If so, it seems strange that they did not deem it advisable to draw on those vast resources to the extent of £10 and spare their servant the pain of having his private affairs paraded before the public. Their imported medical officer came to their aid in the time of need, and it is generally understood that one good turn deserves another. But generosity to their medical officer has never been regarded as a cardinal virtue amongst the rich members of the Cork clubs. Tactically, however, they have committed an error. Had they increased their servant's salary by £10 they would have impressed waverers with the idea that they are supported by a powerful organisation.

Typhoid Fever in Cork.

An unusual number of cases of typhoid fever have occurred in Cork during the past few weeks, and it is to be feared that in more than one case the "succulent bivalve" cannot be held blameless. One well-known gentleman who had partaken largely of oysters suffered from the ambulatory type of fever and lived only nine days after he had taken to his bed. In another instance a woman who is suffering from a very severe attack is known to have eaten oysters freely during the fortnight preceding her illness, and the oysters were brought from a district where sewage contamination is not impossible.

The Queen's College, Cork.

A large percentage of the Cork students who presented themselves for the degree examinations of the Royal University last month were successful. The total number of candidates from all Irish schools was forty-nine. The highest distinction awarded on this occasion was "upper pass." Five obtained it and one of those was a Cork student. The number of first-year's students entering the Cork College this year is so far distinctly larger than last year. This is remarkable, as it was thought the five years' curriculum would have had a deterrent effect on intending candidates.

Nov. 3rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Action of the Roentgen Rays on the Skin.

IN my letter in THE LANCET of Aug. 8th, 1896, I reported a case of dermatitis which had arisen from frequent exposure to the x rays. Dr. Sehrwald of Freiburg has now published a similar case in the *Deutsche Medicinische Wochenschrift*. A boy thirteen years of age was in the course of a photographic demonstration exposed for forty-five minutes to Roentgen rays produced in new and very powerful tubes. A fortnight afterwards his mother found that on his abdomen above the umbilicus there was a circular redness which in a few days grew larger and became covered with small itching blisters. When the case was first seen by a medical man, about six weeks after the experiments, the central portion of the affected region had become nearly normal, but the morbid condition had spread outwards in all directions so that the whole abdomen was involved. The peripheral area was of a brown colour, produced by an increased pigmentation of the superficial layer of the epidermis. In a few weeks the skin resumed its normal condition, recovery being attended by a copious desquamation of the pigmented epidermis, the whole process being very like the specific dermatitis caused by sunburn and termed chloasma caloricum. Dr. Sehrwald points out that, notwithstanding the great number of Roentgen photographs taken every day, cases of skin disease are comparatively rare. He is of opinion that these undesirable effects are produced only when the vacuum tubes are brought too near the body, when the time of exposure is too long, and when the electric current has too high a tension. He therefore recommends that in long continued work the part of the body to be examined should not come within 60 cm. (= 2 ft.) of the tube, that the tubes should be such as require only a short exposure, and that low tension electricity should be employed.

Vaccination Precautions.

The Prussian Government recently decided to investigate certain questions connected with vaccination, and for that purpose appointed a commission, presided over by Dr. Schmidtmann of the Government Medical Department, and composed of bacteriologists such as Professor Koch, Professor Pfeiffer, and Dr. Frosch of the Berlin Royal Institution for Infectious Diseases, together with practical vaccinators. The Commission was consulted as to the possibility of ascertaining without bacteriological examination whether a sample of lymph is in good condition or not, and also whether there is any ground for the belief that vaccination wounds are specially liable to erysipelas. The report of the Commission has just now appeared and supplies information on the following subjects: number and species of bacteria found in the lymph, difference between the bacteria found in animal and in human lymph, connexion between the symptoms of reaction following vaccination and the concentration of the lymph, the method followed by the vaccinator, and the idiosyncrasy of the person vaccinated. The Commission came to the conclusion that there is no essential connexion between the bacteria of the lymph and the inflammation of the tissues at the place of insertion; erysipelas and gangrene are due to secondary infection and are always caused by want of care either on the part of the vaccinator or in the subsequent management of the case. It is impossible for lymph to be absolutely free from all bacteria. The best lymph is calf lymph, in the collection of which no blood has been drawn and which has been treated by subsidence, centrifugation, and solution. Such lymph is the least likely of any to induce excessive reaction.

Cerebro-spinal Meningitis in Berlin.

Cerebro-spinal meningitis, which for several years had entirely disappeared from Berlin, has again become prevalent during the last few months. The paucity of published memoirs on epidemics of this disease may be judged of from the fact that German medical literature contains no investigations on the subject except those of Hirsch and of Leichtenbritt. Dr. Petersen, one of the district medical officers of health in Berlin, made some inquiries into the circumstances of infection during the last epidemic, examining twenty-six hospital cases, the diagnosis in which was quite certain from a clinical, as well as from an anatomical and bacteriological point of view. His results have been published in the *Deutsche Medicinische Wochenschrift* and are to the effect that the infection was communicated either by direct personal contagion or indirectly by the agency of healthy persons or by residence in infected localities. Children were very liable to catch the disease, and it prevailed especially among the poorer classes and among those whose pia mater had from injury or nervous disease become sensitive to pathogenic influences. The incubation period lasts from three to five

days. The mortality is apparently very high, but it is possible that many cases where the characteristic symptoms were not conspicuous may have been classified as other diseases. The germs of the disease retain their virulence a considerable time outside the human body. The common methods of disinfection were useless and strict isolation is essential.

Students at the Universities.

Last summer the number of students in German universities was 29,802; in 1895 it was 28,709, so that the numerical increase for the present year is 993, or 3·5 per cent. The distribution of the students among the various universities was as follows: 4649 in Berlin, 3777 in Munich, 2876 in Leipzig, 1863 in Bonn, 1425 in Breslau, 1415 in Halle, 1379 in Freiburg, 1339 in Würzburg, 1172 in Tübingen, 1164 in Heidelberg, 1138 in Erlangen, 1007 in Göttingen, 965 in Marburg, 948 in Greifswald, 938 in Strassburg, 761 in Jena, 708 in Kiel, 700 in Königsberg, 630 in Giessen, 500 in Rostock, and 420 in Münster. The number of medical students was 8462 in 1896, 8361 in 1895, 8684 in 1894, 8414 in 1893, 8838 in 1892, and 8916 in 1891. There is thus now an obvious increase of young medical men since 1893, following a decrease in the period previous to that date.

Nov. 2nd.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Congresses, Medical and Surgical.

SOCIAL distraction and physical deterrent—Royal marriage and weather so wild as to flood railways and cause landslips—all proved impotent to affect the Congresses, medical and surgical, which have just been holding their annual sittings. In fact, the programme in either case was so rich and the discussions to which it gave rise so animated and instructive that I can do little more than flit over them in swallow fashion—skimming and dipping. To begin with the Seventh Congress of "Medicina Interna," Dr. Baccelli's opening address was in his happiest vein, and infused into the proceedings that genuine scientific spirit, that kindly reciprocity of give and take, which render meetings of the kind as pleasant as they are profitable. Professor Queirolo of Pisa, taking as his subject the "cardiopathics," indicated as an essential condition of "insufficiency" the alteration of the myocardium, while the unequal distribution of the lesion was an essential condition of the symptoms and of the symptomatic difference between "paralysis of the heart" as occurring in "cardiopathics" and in other patients. He supported his theory by clinical experience, and showed the true relation between insufficiency of the heart and diseases of the stomach to consist not, as is asserted, in "stasis," but in "gastro-intestinal intoxication," of which the stasis was a consequence. Following up this theme, so ably handled by Dr. Queirolo, came Professor Forlanini of Turin, with another paper, "Sull' Insuffienza Miocardiaco" (on myocardiac insufficiency), which reopened the discussion, giving an opportunity to Baccelli, Maragliano (who presided at the sitting), Rummo, de Renzi, and Lucatello to develop their views. As reported in the official "Atti," the two papers above indicated, and the thorough "threshing out" they received, will greatly interest the profession in days like these when so many cases of sudden heart-failure have removed conspicuous lives and induced something like panic in the public. Another paper and relative discussion of first-rate quality were those on Sero-therapy in Tuberculosis, in which Dr. Maragliano acted as "starter." I have from time to time given statistics of the Genoese Professor's treatment as practised in his special clinique, and these on the present occasion were sustained by others collected in the Neapolitan school by Dr. de Renzi. "In the serum as prepared and applied by Maragliano," said that able pathologist and consultant, "we have the best of all remedies known to contemporaneous medicine for combating tuberculosis"—a conclusion received with hardly a dissentient; while the majority expressed themselves as at one with Dr. Maraghano on the paramount necessity of dealing with the patient in as early a stage of his malady as possible—the "pretuberculous stage," as defined by English medicine, offering the best chance for practitioner and patient alike. "La sieroterapia," said Baccelli, "nella tubercolosi aveva fatto un notevole passo innanzi" (Serotherapy in tuberculosis had taken a notable step forward). The concluding address was delivered by Dr. Gaetano Rummo, Professor of Medicine in the Neapolitan school, and was an inspiriting and reassuring demonstration to the Congress of how signally its combined theoretical and clinical discussions reacted for good on the profession, down to the most modest "medico condotto" (salaried medical officer) in the remoter communes. The seat of the next Congress of Medicina Interna was by acclamation fixed at Naples. As to the Congresses of Surgery opened last week by Dr. Durante, Professor of Surgery in the University, I can only draw attention to Dr. Allessandri's monograph, "Sull' Anestesia, generale e locale," as indicating the progress made in the subject due to THE LANCET and the Hyderabad Commissions on Chloroform. Another paper, equally followed by an interesting discussion, was Dr. Marcucci's on the Cure of Tuberculous Peritonitis. Once more I must refer the reader to the officially revised "Atti" for these and other contributions to surgical practice. Indeed, the development of what may be called "congressional science" is reaching quite formidable dimensions in Italy, the two Congresses above referred to being contemporaneous with others which ran them close whether as to the distinction of their *personnel* or the originality and ability of their work. At Jesi, in the Marches, a provincial Congress, opened on the 26th ult., ran a most interesting career, among the participants being Professor Antonio Murri of Bologna, whose researches on cranial abscesses gave additional value to the first number of THE LANCET for 1895. His addresses at Jesi on Experimental Therapeutics and Serotherapy in Tuberculosis would of themselves have sufficed to make memorable any congress of the profession. Then there is announced for this week at Messina a "Congresso d'Igiene," at which papers will be read by such masters of their respective subjects as Dr. Napoleone Colajanni, member of the Chamber of Deputies, and Professor Sergi of the University of Rome—the former on "Hygiene from the Social Point of View," the latter on "Degeneration and Social Hygiene," while the indefatigable Professor Maragliano delivers a third address on "The Prophylaxis of Tuberculosis." One immediate outcome of this momentous and multiplying activity in medico-scientific research, practice, and discussion must be to reinforce Professor Michael Foster's demand for an international register of work, so as to prevent contemporary investigators from uselessly re-traversing ground already trodden.

Medical Honours.

On the occasion of the marriage of the Crown Prince to the Principessa Elena of Montenegro a series of senatorial creations have been announced, prominent in the roll, I am happy to say, being distinguished members of the surgical and medical departments of the healing art. Only in one instance, so far as I know, has the honour of a seat in Italy's gilded chamber been declined, and that exception is your contributor, Dr. Antonio Murri of Bologna, who (to the surprise of none who know him) is content to hold aloof from such political distinction. On the other hand, the profession is gratified by the acceptance of the same honour on the part of Dr. Antonino d'Antona, a Sicilian by birth, Professor of Pathological Surgery in the Neapolitan school, and known beyond Italy not only as having performed the first operation in ovariotomy at Naples, but as the author of able works on surgical fever (particularly commended by Nélaton), on inflammation, and on tetanus. Another deserving recipient of senatorial rank is Dr. Giacomo Sangelli of the University of Pavia, where he holds the chair of surgical pathology, a subject in which he has done memorable work, embodied in an excellent atlas and a museum containing more than a thousand specimens, all of his own preparation. Yet another is Dr. Antonio Cardarelli, Professor of Clinical Medicine in the University of Naples, whose intervention at the various medical congresses, national and international, is always welcomed for the special observation and general debating power he contributes to their proceedings. Other men of science, medical in their training if not in their special *métier*, have also been singled out for the rank of senator, and, like their predecessors in past legislation, may be looked to for imparting a thoroughness and an enlightened partiality to the business of the upper chamber not always conspicuous in the lower.

Oct. 26th.

RUSSIA.

(FROM OUR OWN CORRESPONDENT.)

The Russian Conference of Syphilologists.

SOME interesting statistics may be expected to see the light at the Government Conference on Syphilis, which, as already announced in THE LANCET, will meet in St. Petersburg either late in November or early in December. The organisation of the conference was entrusted to a special committee of the Medical Department, and they have already gathered an abundance of material and information on the prevalence of syphilis in the country and the method in vogue for controlling it. To this material will be added a similar quantity collected by the Finnish Senate, and dealing with the disease in the Grand Duchy of Finland. All this preliminary information will form the basis of the discussions, the main object of which will be to formulate some practical and effective scheme for keeping venereal diseases—at present terribly prevalent—in check. One proposal which will be discussed in the conference is the suggestion that asylums or lazarets should be instituted for the reception of children accidentally infected with syphilis in order to isolate them from the rest of the family who may be still uninfected. Some have even previously advocated the similar isolation of adults the subject of syphilis.

The Origin of Syphilis in Russia.

The history of syphilis and venereal disease generally in Russia will, it may be hoped, come in for some attention in the discussions of the conference. It would be of the greatest interest to know when these diseases first appeared in Russia and from what source they were supposed to come. Their comparative antiquity in other European countries and the influence of the Crusades in spreading them are pretty generally acknowledged; but comparatively little is known of their origin in Russia. There is some evidence to show that syphilis was not introduced into that country until as late as the sixteenth or seventeenth century; and the following passage from a little-known book may therefore be quoted, not only for its attractive literary qualities, but also as a real contribution to the history of the subject. The book from which it is taken was published in 1671 and was entitled "The Present State of Russia in a Letter to a Friend at London; Written by an Eminent Person residing at the Great Tzar's Court at Mosco for the space of nine years." Though published anonymously it was, there can be no doubt, the work of Dr. Samuel Collins. Now Dr. Collins was a graduate of Padua and of Oxford; he was for nine years body-physician to the Tsar Alexis (Peter the Great's father); and it is said of him that "of all the physicians who had then been known in Russia Dr. Collins is reputed to have been, without exception, the most celebrated." Consequently his evidence may be taken as worthy of some consideration, though in the present instance he may not seem to treat the subject with that decorum and sense of gravity which might have been expected of him. He writes: "My Lady Lues Venerea is as well known in Poland as in the place where she was born; not a *Mushy Panny* (Lord) nor a *Pannyn* (Lady) but are intimately acquainted with her, and so is the Court and the country. The Russes in the conquests of Vilna and many other towns and provinces on the borders of Poland have taken her Ladyship prisoner, whom they are like to keep longer than their towns. For till this war she was not known here this thousand years; but when she gets into such a cold country as this she earths like a Badger so deep that there's no driving of her out without a Pickaxe or Firebrand; *juxta illud, les véroles de Rouen et la boue de Paris ne jamais sortent la pais sans oster la pièce.* The Pox of Rouen and the Dirt of Paris never go away without taking a piece out." If this evidence may be accepted—and there seems no good reason why it should not—syphilis came to Russia through the Poles, and, as in the case of so many other infectious disorders, war was the active agent in spreading it. Once in the country, in Collins's picturesque phrase, it "earthed like a badger." In the last century many measures were put in force to try to control it, more particularly in the army, where its ravages were great. It was during Catharine's reign that most was done in this direction. The Empress herself is said to have been present at a meeting of the Senate when some fresh *ukaze* dealing with the matter was being discussed. The licentiousness of the age led to a vast spread of the disease among the so-called upper classes in the two capitals, and a measure, characteristic of the time, was the institution by the Empress of asylums or homes for the treatment of venereal disease, in which the most absolute secresy was enjoined, no questions being asked as to the name, age, or rank of the individual who sought their shelter. Later in her reign a hospital with thirty beds for each sex was opened in St. Petersburg; it was called the "Secretnaia Bolnitza," or secret hospital, and in it the same discreet silence was observed as in the other homes. The linen used in the hospital is said to have been marked with the simple word, "Discretion."

Local Committees for the International Medical Congress.

In connexion with next year's International Congress a committee has been formed in St. Petersburg, on the initiative of Professor Petersen, with the object of showing the hospitality of the second capital of Russia—Moscow being the *pervoprestolnaia*, or first, capital of the country—to foreign members of the Congress who may pay it a visit. Another local committee has been formed in Brest-Litofsk, an important town and junction on the main line between Warsaw and Moscow, and therefore on the main route from most of the western countries of Europe. The object of this committee is to facilitate the journey of foreign visitors to the Congress and to furnish any who may break the journey there with accommodation and information.

The Queen and the Russian Jenner Commemoration.

November 24th (December 6th) is the date which has been finally selected for the Russian Jenner Commemoration. The exhibition of relics and objects connected with vaccination and also the commemoration meeting will be held in the *sal* of the Conservatorium of Music in St. Petersburg. Most of the foreign governments who were officially addressed by the Russian National Health Society have responded and sent some objects of interest or statistical material. In England application was made to Lord Salisbury, who wrote a most cordial reply. He brought the matter before the Queen, and Her Majesty has graciously sent to the society a very charming portrait-print of Lady Mary Wortley Montagu, which may well occupy a place in an exhibition devoted to the subject of small-pox and its prevention.

Oct. 21st (Nov. 2nd).

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Battle of the Clubs in Australia.

THE relations of the medical profession to friendly societies has been much discussed in the colonies of late, and especially in Sydney, where meetings of the profession have been held and some definite and organised steps taken to mitigate the evils complained of. Some startling facts are related in a little booklet on the subject just issued by Mr. L. Bruck, who has collected his information from the rules, reports, and balance-sheets of the various friendly societies, from their agreements with their medical officers, and from lodge medical officers in all parts of Australia. It appears from this opportune compilation that in New South Wales there are 37 distinct societies, with 818 branches and a membership of 71,218, or about 284,871 persons, entitled to medical attendance. The largest institute in the Southern Hemisphere as regards numbers is the "Balmain United Friendly Societies' Dispensary," consisting of 24 lodges, with about 3000 members, or upwards of 12,000 persons, or one-half the total population of the district. They are attended to by three medical officers, each of whom receives a fixed salary of £150 a year, and a further sum of £450 is divided amongst them *pro rata* in proportion to the number of prescriptions written. The rate paid per member per annum is 6*s*. The total number of prescriptions dispensed during the last year was 50,142, so that the medical officers received the sum of 4¼*d*. for every consultation or visit. In December, 1894, three additional lodges were affiliated with the dispensary, causing an influx of 600 new members, but the medical staff was not increased, and their remuneration was not raised, although the last report shows that the saving resulting from the affiliated lodges joining the dispensary was £6387 13*s*. This institution has as one of its members a Minister of the Crown with a salary of £1370 a year, who avails himself of the dispensary medical

officer's services. A similar combination of lodges exists at North Sydney, with a total membership of over 700, another at Parramatta with 1300 members, and in Sydney itself the Manchester Unity Independent Order of Oddfellows carry on a dispensary with 2684 members. As regards lodges not affiliated to a dispensary the usual rate paid to medical officers is from 16*s.* to 20*s.* per member. The fee for accouchement is generally 20*s.* or 21*s.*, but one lodge, with a membership of 850, allows no fee for accouchements. In Queensland there are fifteen distinct societies with 243 branches and a total membership of 17,086. The Brisbane Associated Friendly Societies Medical Institute has a membership of 2834. It employs three medical men at a fixed salary of £300 a year, with £10 extra for every twenty or part of twenty members on his list over 400. The medical officers are not allowed private practice. They "shall provide rooms at their private residence, furnished to the satisfaction of the committee," and shall "permit a sign, provided by the committee, to be fixed" at the residence. In South Australia there are no institutes of affiliated lodges. In 1892, the latest date available, there were fifteen distinct societies, with 422 branches and 35,892 members. The usual remuneration for medical attendance and medicines to members and their families is from 25*s.* to 30*s.* In Victoria the total number of members of thirty-three distinct societies was 79,204 at the end of 1894. The amount paid to the medical officers varies from 10*s.* to 18*s.* per member a year. The Bendigo United Friendly Societies Medical Institute has a membership of 2780, or more than one-third of the total population. Two medical officers receive an aggregate salary of £900 a year. The total number of visits and consultations a year was 34,900, for each of which the remuneration to the medical men amounted to 6½*d.* The institute was able to return to the affiliated lodges the sum of £479 as a rebate, and the assets over liabilities were £5402. Taking all the colonies together Mr. Bruck calculates that one-fourth of the total population are lodge patients, and that the total number of medical visits and consultations would be about 3 062,500, for each of which the average remuneration is 10*d.* There are 2650 medical men in Australia, 170 of whom are not in private practice. Of the remainder fully one-third have lodge practices, giving an average of nearly 1200 souls to every lodge medical officer. As a remedy for the present state of affairs Mr. Bruck suggests that every practitioner should start a list of his own and enrol members of all classes at fixed rates, charging from 1 to 2½ per cent. on their annual income, according to status, number in family, and their physical condition. On Sept. 5th a meeting of the medical profession was held in Sydney, Dr. Sydney Jones presiding. The committee appointed at a previous meeting of the profession (on May 8th) brought up a report. It may be remembered that at the previous meeting it was resolved that the admission into friendly societies of any member whose income is over £200 a year is to be condemned, and that no member of the profession should accept the post of medical officer to any medical aid society or proprietary lodge. The committee reported that after prolonged negotiations with the clubs and warehousemen's benefit association that body declined to fix a wage limit of £200 a year. In response to a request from the committee the medical officers to the association agreed to resign their positions if required. A circular was sent to all members of the profession in Sydney asking them not to apply for the positions if vacated by the present medical officers, or to meet in consultation any who might do so. The circular had been largely and favourably responded to. The committee suggested that the medical officers to the association be now asked in the interests of the profession to resign. With a view of remedying the abuses in connexion with medical aid societies and friendly societies generally the committee formulated a scheme for establishing a Provident Medical Association on the lines of that at Eastbourne. The meeting adopted the report of the committee and resolved that "the Sydney and Suburban Provident Medical Association be now established."

The Milk Supply of Melbourne.

At the last meeting of the Board of Health of Victoria a report was read from the newly appointed veterinary inspector, Mr. Cameron, on the condition of some of the dairies which supply the metropolis with milk. He found the milking-sheds in many instances in a filthy state and the general arrangements so faulty that an uncontaminated milk-supply must be secured with difficulty. Out of 351 cows examined 15, or 4·27 per cent., were distinctly tuberculous, 9 showed symptoms of the disease, 3 were affected with actinomycosis, and 2 others had symptoms of it. Practically no inspection of drains is carried out by the officers of the municipal councils, who are the local boards of health. On Aug. 7th last a public meeting was held in Melbourne for the consideration of the condition of the milk-supply, and a committee was appointed to report on the formation of a company to distribute pure milk to the consumer. On Sept. 22nd another meeting was held, when the committee presented a report to the effect that, without any additional cost to the consumer, pure milk can be supplied which will keep sound for forty-eight hours and be perfectly wholesome. The committee propose that the milk should be "Pasteurised" and that the dairy and herds be systematically inspected, the milk analysed at the central depôt and delivered in hermetically sealed sterilised vessels. It was decided to form a company to carry out these objects and as a commercial undertaking. Out of 100 shares of £50 each between sixty and seventy were at once taken up.

A Health Act for New South Wales.

On Sept. 24th a Public Health Bill was introduced into the Legislative Assembly of New South Wales. It is astonishing that such a measure has not been law long ago, and it is to be sincerely hoped the Bill will pass now it has been introduced. It is a comprehensive measure, based, to a large extent, on the various Acts in operation in the United Kingdom and the other colonies. It provides precautions against the spread of infectious disease, the pollution of drinking-water, the adulteration of food, the erection of buildings on unhealthy sites, the registration and inspection of drains and of lodging-houses, the control of cemeteries, and the establishment of crematoria. Existing machinery is made use of for carrying out the Act and new bodies are created. Where there is an incorporated area the local councils are constituted the local health authority; outside incorporated areas the police are to administer the Act. In cases where the local authority neglect or refuse to do their duty the Board of Health is empowered to call upon them to do so, and in default the governor in council, on the recommendation of the board, can make orders for carrying out the work. The local authorities are to keep the board informed as to the sanitary condition of their districts by regular reports.

Report of the Leprosy Board.

Dr. Sydney Jones, Dr. F. H. Quaife, and Dr. W. C. Wilkinson, the board appointed to inquire as to whether an inmate of the leper lazarette at Little Bay was suffering from leprosy, have sent in their report to the Premier. They are unanimously of opinion that the man is the subject of anæsthetic or nerve leprosy.

Further Trouble at the Adelaide Hospital.

The resident staff at the Adelaide Hospital have resigned in a body, but the letter in which they resigned has not been made public. The Hospital Board has accepted the resignations, but the whole matter has been kept very quiet.

Appointment of Gynæcologists at the Sydney Hospital.

Owing to the death of Mr. Chambers the position of gynæcologist at the Sydney Hospital has become vacant, and the House Committee recommended that owing to the number of patients in this department two senior gynæcologists should be appointed. The recommendation was referred to the staff, who reported that an increase in the number of gynæcologists was not necessary. At the monthly meeting on Sept. 15th the Board declined to increase the number of gynæcologists.

Sept. 24th.

A GAS "EXPOSITION" IN NEW YORK.—A collection of gas apparatus and appliances of every description for the twofold purpose of affording the general public and the gas engineer an opportunity to study the developments that have taken place in the gas industry during recent years is announced to be held in New York during the two weeks beginning Jan. 25th, 1897. The exhibition will occupy the buildings of the Madison-square-gardens, and a principal feature will be the demonstration of gas for cooking purposes. The whole scheme is being organised by the Gas Industries Company, 280, Broadway, New York, and their efforts seem likely to result in a successful and interesting undertaking.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board in the subjects indicated:—

FOUR YEARS REGULATIONS.

Part I., Chemistry, including Chemical Physics:

Beasley, Charles Herbert, Guy's Hospital.
Leathem, Alfred Newman, Charing-cross Hospital.

Part II., Materia Medica:

Ashby, Edgar, Guy's Hospital.
Beringer, Fritz John Alfred, London Hospital.
Crossley, William Harold, St. Bartholomew's Hospital.
Davies, William Rees, Guy's Hospital.
Gruchy, Edgar John, London Hospital.
Hues, Herbert Walter, Mason College, Birmingham.
Lloyd, Langford Newman, Charing-cross Hospital.
McKay, Robert, Middlesex Hospital.
Milton, John Penn, King's College Hospital.
Morgan, Frederick Charles, University College, Bristol.
Prichard, David Llewelyn Kurtz, University College, London.
Sellors, Thomas Blanchard, Middlesex Hospital.
Smith, Walter Hugh Montgomery, Guy's Hospital.
Wallace, James Williamson, University College, Bristol.
Wilkinson, Arthur Wilfrid, St. Bartholomew's Hospital.
Wilson, John Harold, Middlesex Hospital.
Wood, Percival, St. Bartholomew's Hospital.

FIVE YEARS REGULATIONS.

Part I., Chemistry and Physics:

Bishop, Frank Russell, Charing-cross Hospital.
Boyle, Henry Edmund Gaskin, St. Bartholomew's Hospital.
Couzens, Alfred John, London Hospital.
Cruickshank, Alexander Douglas Macdonell, London Hospital.
Gettings, Harold Salter, Mason College, Birmingham.
Gibson, William Stonier, Owens College, Manchester.
Haydon, William Chatterley, St. Mary's Hospital.
Hertslet, Lewis Eccles, London Hospital.
Hughes, Thomas Hugh James Ellis, St. Mary's Hospital.
Leah, Frederick Arthur, Owens College, Manchester.
Lee, Charles, Firth College, Sheffield, and Guy's Hospital.
Morrow, David, Queen's College, Belfast.
Pascoe, James Sydney, Charing-cross Hospital.
Pitt, Robert Cecil, London Hospital.
Smith, Robert Howard Newby, London Hospital.
Wallis, Vernon Montague, Guy's Hospital.
Whitehead, Arthur Ernest, Firth College, Sheffield.
Whitmore, Fielding Charles, Royal College of Surgeons, Dublin
Wright, Arthur Cyril, St. Mary's Hospital.

Part II., Practical Pharmacy:

Adams, Ernest Beadon Dixon, St. Bartholomew's Hospital.
Ascough, Matthew Thomas, Owens College, Manchester.
Ashmore, Arthur, Yorkshire College, Leeds.
Attwood, Richard Denton, Guy's Hospital.
Bartlett, Basil Sorley, University College, London.
Bennett, William Frederick Cockayne, Firth College, Sheffield.
Bentley, Saville, Firth College, Sheffield.
Brewer, Alexander Hampton, St. Bartholomew's Hospital.
Brown, Allen Bathurst, St. Bartholomew's Hospital.
Davies, Charles Woolmer, St. Thomas's Hospital.
Dugon, Thomas Henderson, London Hospital.
Eames, Thomas Richard, Owens College, Manchester.
Edgelow, George William Hennen, London Hospital.
Falwasser, Arthur Thomas, Guy's Hospital.
Fleming, John Kenneth Sprot, St. Bartholomew's Hospital.
Gill, Clifford Allchin, University College, London.
Harvey, William John Saundry, Guy's Hospital.
Holroyd, Benjamin, Yorkshire College, Leeds.
Ingram, Percy Cecil Parker, University College, Cardiff.
Johnston, William, Charing-cross Hospital.
Jones, Ernest Guy, Owens College, Manchester.
Jones, William Edmund, Owens College, Manchester.
Kirton, David Henry Jevons, Mason College, Birmingham.
Lewellyn, John Woodruff, University College, Cardiff.
Page, Algernon Fountain, St. Bartholomew's Hospital.
Reilly, Percy George, London Hospital.
Richards, Ralph Conrad, University College Hospital.
Silas, Walter Biscombe, Westminster Hospital.
Symons, Angelo Nelson, London Hospital.
Tobit, Percy Praime, King's College Hospital.
Turner, Douglas Duke, St. Thomas's Hospital.
Upcott-Gill, Geoffrey Allen, University College, London.
Walters, Joseph, University College, Cardiff.
Webster, Harold George, University College, Liverpool.

Part III., Elementary Biology:

Batterbury, Richard Neville, King's College Hospital.
Gater, Horace James, Guy's Hospital.
Gibson, William Stonier, Owens College, Manchester.
Jeffcock, Francis John Chester, St. Bartholomew's Hospital.
Littlejohn, Edward Salterne, St. Paul's School, West Kensington,
Paulin, George Alexander, University of Edinburgh.
Price, Charles Trevor, King's College and St. Bartholomew's Hospital.
Rudge, Frederick Henry, University College, Bristol.

CAMBRIDGE UNIVERSITY.—At the Congregation on Oct. 29th the following medical degrees were conferred:—

M.B.—Hunter Finlay Tod, M.A., B.C., of Trinity College.

M.B. and B.C.—Arthur Blackwood Ward, B.A., of Selwyn Hostel; and Henry James May, B.A., of Gonville and Caius College.

The report recommending the assignment of a provisional stipend of £300 to the professorship of surgery was discussed by the Senate on Thursday, Oct 29th. The speakers were all in favour of the recommendation, though a strong desire was expressed that the increase of the stipend to its full amount of £500 should not be delayed.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held on Oct. 28th, Mr. Buxton Shillitoe being in the chair. The following cases were shown by Dr. P. S. Abraham: (1) A Case of Delhi Sore; (2) Pityriasis Rubra Pilaris (Devergie) in a woman; (3) ? Sarcoma Cutis in a woman; (4) Lichen Ruber Acuminatus in a woman; and (5) Tar Acne in a man. A paper on Yaws in India was read by Mr. Arthur Powell, surgeon to the N. W. Cachar Hospital, Assam, in which he expressed himself strongly against the view that the disease was syphilis. The paper was illustrated by numerous photographs, drawings, and sections.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. Saltet has been appointed to the chair of hygiene in succession to Dr. Forster. Dr. Winkler of Utrecht has been appointed to the chair of neurology and psychiatry.—*Atlanta Medical College:* Dr. H. P. Cooper has been appointed Professor of Anatomy in succession to the late Dr. Armstrong.—*Budapest:* Dr. E. Baumgarten has been recognised as *privat-docent* in Laryngology.—*Cracow:* Dr. L. Krynski has been recognised as *privat-docent* in Surgery. Dr. Wachholz has been promoted to an extraordinary professorship of forensic medicine.—*Halle:* Dr. P. Jensen has been recognised as *privat-docent* in Physiology.—*Königsberg:* A Clinic for Children's Diseases has been established, and Dr. Hugo Falkenheim, who has been for many years assistant in Professor Naunyn's Medical Clinic, has been given charge of it with the rank of Extraordinary Professor.—*Prague (Bohemian University):* Dr. L. Haskovec has been recognised as *privat-docent* in Neurology.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—Schools of Surgery: distribution of prizes:—Winter session. Descriptive Anatomy—junior: W. J. Trembath, first prize, cheque and medal; J. S. P. Stewart, second prize, cheque and certificate. Senior: D. A. Fitzgerald, first prize, cheque and medal; W. J. Anglim, second prize, cheque and certificate. Practical Anatomy—first year: Miss K. F. Lynn, first prize, cheque and medal; F. G. Fitzgerald, second prize, cheque and certificate. Second year: G. W. Little, first prize, cheque and medal; J. J. Huston, second prize, cheque and certificate. Third year: M. W. Falkner and D. Hadden (equal), first prize, cheque and medal; P. H. Falkner, second prize, cheque and certificate. Practice of Medicine—D. Hadden, first prize, cheque and medal; F. J. Palmer, second prize, cheque and certificate. Surgery—F. A. Benson, first prize, cheque and medal; W. H. May, second prize, cheque and certificate. Midwifery—S. G. Longworth, first prize, cheque and medal; Miss L. F. S. Strangman, second prize, cheque and certificate. Physiology—M. Gavin, first prize, cheque and medal; P. S. O'Reilly, second prize, cheque and certificate. Chemistry—G. B. Vance and S. L. Worthington (equal), first prize, cheque and medal; J. S. P. Stewart, second prize, cheque and certificate. Pathology—F. J. Palmer, first prize, cheque and medal; S. G. Longworth, second prize, cheque and certificate. Physics—J. S. P. Stewart, first prize, cheque and medal. Summer session. The Barker Anatomical Prizes—C. T. Hilton, first prize, £26 5*s.*; A. S. Greene, second prize, £15 15*s.* Mayne Scholarship—A. I. Eades, £15. Gold and Silver Medals in Surgery—C. H. M'Cullagh, gold medal; A. I. Eades and F. J. Palmer, silver medals. Practical Histology—Miss K. F. Lynn, first prize, cheque and medal; S. R. Godkin, second prize, cheque and certificate. Practical Chemistry—A. S. Cosgrave and L. Geraty (equal), first prize, cheque and medal; Miss M. E. Bridgford, second prize, cheque and certificate. Public Health and Forensic Medicine—F. J. Palmer, first prize, cheque and medal; F. A. Benson, second prize, cheque and certificate. Materia Medica—J. F. C. Meyler, first prize, cheque and medal; C. B. Pasley, second prize, cheque and certificate. Practical Pharmacy—S. Tucker, first prize, cheque and medal; T. A. M'Dougall, second prize, cheque and certificate. Biology—J. R. Magee, first prize, cheque and medal; Mrs. H. L. Hennessy, second prize, cheque and certificate.

MEDICO-PSYCHOLOGICAL ASSOCIATION. — The autumn meeting of the south-western division of this association took place at Fisherton House, Salisbury, on Oct. 20th, Dr. Mickle, President, being in the chair. The following were elected members of the association: A. Davidson, M.B., C.M. Edin., W. Boddie, M.B., C.M. Aberd., H. J. Cardale, M.B., C.M. Edin., and C. R. Stratton, F.R.C.S. Edin. On the invitation of Dr. Soutar it was unanimously resolved to hold the spring meeting at Barnwood House, Gloucester. The scientific communications were well received and many members joined in the discussion which followed each paper. The members were most hospitably entertained by Dr. Finch.

FOOTBALL CASUALTIES.—On Oct. 30th, in a game at Sonning, a player fractured his knee-cap and was conveyed to the Royal Berkshire Hospital.—On Saturday last, in a match at Holbeck, a player (a half-back) fractured his clavicle. On the same day, while playing a match at Meltham, the captain of the Slaithwaite team fractured his leg and was removed to the Huddersfield Infirmary, and during a game at Dulwich a player sustained a compound fracture of his left leg.—A singular coincidence occurred at Weymouth on Oct. 28th. A match was played for the benefit of a colleague who had fractured his leg in a game a fortnight previously, and during its progress another player suffered a similar accident, and was removed to the hospital, where both now occupy the same ward.—In a match played between the Treherbert and Bridgend (Glamorganshire) teams on Oct. 31st a member of the former team dislocated his hip.

THE DIFFUSION OF SMALL-POX.—Small-pox has been almost an unknown quantity in this country during several weeks past, such few cases as have occurred having been confined to the metropolis and to the little town of Redruth in Cornwall. As regards London we find that whereas in the four weeks ended on July 11th there were 62 notifications of small-pox, including 24 in the single parish of Islington, the number in the next four weeks, ended Aug. 8th, fell to 12, of which one-half were in Islington. In the succeeding four weeks, ended on Sept. 5th, there were only fourteen notifications, one-half again being in Islington; and in the similar period ended with Saturday, Oct. 3rd, the total only reached 4, Islington for another four weeks claiming one-half of the whole. In the four weeks ending with the closing day of October there were but three admissions to the hospital ships in Long Reach, whilst there has not been a death registered in London from the disease for many weeks past. The number of cases remaining on board the ships at the close of the first week in August was 22; a month later it fell to 16; at the commencement of last month it was only 3; and on Saturday the ships contained only the two cases admitted during the week. At Redruth the disease appeared in September, the first case having occurred at the village of St. Agnes, in the rural district of the Redruth union, and though the patient (an adult) was promptly removed to hospital, this was not effected in such a manner as to prevent the carriage of infection into the town of Redruth itself, for the next case (that of a child in the town) can be traced as having caught the disease at St. Agnes, where the patient had gone on a visit of a few days' duration. The child was aged three years and had not been vaccinated. Other cases have since arisen, and prompt measures are being adopted for checking the spread of infection, including special facilities for vaccination and re-vaccination. But the town seems to be without any isolation hospital for the reception of the patients.

ROYAL INSTITUTION.—At the general monthly meeting of the members of the Royal Institution held on Nov. 2nd, it was reported that the managers had elected Professor Augustus D. Waller, M.D. Aberd., F.R.S., Fullerian Professor of Physiology for three years, the appointment to date from Jan. 13th, 1897, and also that the managers had appointed Dr. Alexander Scott, M.A., D.Sc., to be Superintendent of the Davy-Faraday Research Laboratory of the Royal Institution, the directors already appointed by the managers being Lord Rayleigh and Professor Dewar. The Christmas lectures specially adapted for children will this year be given by Professor Silvanus P. Thompson, F.R.S., his subject being "Visible and Invisible Light." After the meeting the members inspected the new rooms which have been lately added to the Library of the Royal Institution, through the munificence of Dr. Ludwig Mond, F.R.S., which rooms will provide increased accommodation for the members on the occasions of the Friday evening meetings.

INFIRMARY MEDICAL SUPERINTENDENTS' SOCIETY. The first meeting of the session was held on Oct. 31st at the Lambeth Infirmary, the President, Mr. Walter Burney, occupying the chair. Mr. Marcus Quarry shewed several cases possessing great clinical interest. The Poor-law Officers' Superannuation Act was discussed, and Dr. F. S. Toogood (Lewisham Infirmary) expressed the opinion that as probationers were appointed by the guardians for a certain definite period any deductions from their salaries must be repaid to them on the completion of their term of service. —Mr. D. M. Forbes (Shoreditch Infirmary) said that if Dr. Toogood's contention was borne out it would abolish much of the agitation which certain persons were endeavouring to ferment against the Bill. A vote of thanks to Mr. Quarry for his courtesy and hospitality was unanimously accorded, and the proceedings terminated.

MIDLAND MEDICAL SOCIETY. — The annual meeting of this society was held on Oct. 14th. Dr. Alfred H. Carter was elected President, Mr. Garner was re-elected treasurer, and Mr. George Heaton and Dr. Kauffman were re-elected secretaries. The inaugural meeting was held on Oct. 29th in the Grand Hotel, Birmingham, when Sir William H. Broadbent, Bart, M.D. Lond., delivered the annual address, taking as his subject "Clinical Obiter Dicta." He dealt with various problems of diagnosis and of treatment which present themselves in the course of practice, and gave form to thoughts which must have floated uncrystallised from time to time in the minds of many of his listeners.—A vote of thanks, moved by Sir Willoughby Wade, seconded by Mr. Alfred Freer, and carried by acclamation, ended the proceedings.—About 120 members of the Society and visitors were present.

DIPHTHERIA IN LONDON.—The closing days of October were witnesses of another rise in the mortality from diphtheria as compared with two of the preceding three weeks of the month. The earlier weeks to the 24th inclusive yielded deaths to the number of 52, 66, and 57 respectively, whilst the concluding week chronicled 64 deaths, a number 20 in excess of the corrected decennial average for the forty-fourth week of the period 1886–95. Ten of the deaths were in Camberwell, 6 in Islington, 5 in Chelsea and in Poplar, 4 in Hackney, in Shoreditch, and in Lambeth, and 3 in Wandsworth and in Lewisham sanitary areas. All the deaths were of young persons aged under twenty years, and only two were of infants under one year old. The admissions to hospital last week were 122 in number, and the patients remaining under isolation on the last day of the month were 793 in number. In addition to the 64 deaths in London proper there were last week other 14 deaths registered from the disease in the suburbs of the Metropolis, of which half were in the West Ham registration district. Thus we find 80 deaths from the disease in London and its outer ring. Outside London and West Ham there were but 25 deaths from diphtheria last week in the 33 great towns of the Registrar-General.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALDERSON, WILFRED E., M.B., B.S. Durh., has been appointed Assistant Medical Officer to the Newcastle-on-Tyne Dispensary.

ARMITAGE, EDWARD, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Grimsby Rural District Council.

ATKINSON, G. L., L.S.A. Lond., has been appointed House Surgeon to King's College Hospital, London.

AVELINE, HENRY TALBOT SYDNEY, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Superintendent of the New Somerset County Asylum, Cotford, near Taunton.

BOND, F. T., M.D. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Thornbury Rural and District Council.

BRODIE, W. H., M.D. Edin., F.R.C.S. Eng., D.P.H., has been appointed Medical Officer for the First and Second Sanitary Districts of the Battle Union.

BROUGHTON, HENRY T., M.R.C.S., has been re-appointed Medical Officer of Health by the Heckmondwike District Council.

BUCHANAN, G. B., M.B., C.M. Glasg., has been appointed Assistant Surgeon to the Glasgow Cancer Hospital.

CHAPMAN, WALTER, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon and Secretary to the Tunbridge Wells General Hospital.

CHASTER, GEORGE W., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Medical Officer to the Southport Infirmary.

CLOUGH, J., M.B. Lond., has been appointed Resident Obstetric Officer to the General Infirmary, Leeds.

COATES, WM. H., M.B. Durh., L.S.A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Partington Rural District Council.

COOPER, H. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Brightlingsea Urban District Council.

DINGLE, H., M.R.C.S., L.R.C.P., has been appointed House Surgeon to King's College Hospital, London.

ERHARDT, C. C. J., M.R.C.S., L.R.C.P., has been appointed Assistant House Accoucheur to King's College Hospital, London.

GLOVER, J. H., M.B., M.Ch. Edin., has been appointed Medical Officer of Health for the Belvoir Rural Sanitary District, vice J. Eaton.

HUSBAND, F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Crowland Rural Sanitary District, vice Dr. C. L. Williams, resigned.

HUTTON, A. E., M.R.C.S., L.R.C.P., has been appointed House Physician to the General Infirmary, Leeds.

JACOB, F. H., M.R.C.S., L.R.C.P., has been appointed House Physician to King's College Hospital, London.

JEPHCOTT, R. W., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Alcester Rural District Council.

LANGWORTHY, G. V., M.R.C.S., L.S.A., has been appointed Medical Officer to the Fourth Sanitary District of the Plympton Union, vice J. E. Adkins, deceased.

LEVI, J., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the General Infirmary, Leeds.

LIGERTWOOD, C. E., M.B., Ch.B. Vict., has been appointed Resident Medical Officer to the Ida Hospital (General Infirmary), Leeds.

LOWNE, B. T., F.R.C.S. Eng., has been appointed Medical Officer for the Third Sanitary District of the Hartley Wintney Union.

MACARTNEY, DUNCAN, M.D. Glasg., C.M., D.P.H. Camb., has been appointed Medical Officer to the Glasgow Cancer Hospital.

MADDEVER, J. C., M.D. Glasg., has been re-appointed Medical Officer of Health for the Brownhills Urban Sanitary District.

MCDOUGALL, ALAN, M.B. Vict., M.R.C.S., has been appointed Senior House Surgeon to the Ancoats Hospital, vice Emery, resigned.

MORSHEAD, E. G. A., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator by the Guildford Board of Guardians.

PLAYFAIR, E., M.B. Lond., M.R.C.S., L.R.C.P., has been appointed Medical Registrar to King's College Hospital, London.

PRINGLE, GEORGE L. KERR, M.B., C.M. Edin., has been appointed Honorary Medical Officer to the Bridgwater Infirmary.

ROBSON, F. W. HOPE, M.B. & C.M. Edin., has been appointed Assistant House Surgeon to the Rotherham Hospital, vice Charles Alleyne Phillips, resigned.

ROWLING, S. T., M.B., Ch.B. Vict., has been appointed House Surgeon to the General Infirmary, Leeds.

SMITH, G. U., M.B. Lond., M.R.C.S., L.R.C.P., has been appointed Assistant House Physician to King's College Hospital, London.

STENHOUSE, E., has been appointed Public Analyst for the Borough of Clitheroe.

TAYLOR, J. R. A., M.R.C.S., has been appointed Medical Officer to the London and South-Western Railway Company, vice G. J. Vine, resigned.

TIMMINS, D., M.R.C.S., has been re-appointed Medical Officer of Health for the Borough of Dudley.

TRIBE, P. C. E., M.R.C.S., L.R.C.P., has been appointed House Accoucheur to King's College Hospital, London.

TRIMBLE, ROBERT, L.R.C.P., L.R.C.S. Edin., L.S.A. Lond., has been appointed Medical Officer for the No. 1 District of the West Bromwich Union.

WILLIAMS, R. P., M.R.C.S., L.R.C.P., has been appointed House Surgeon to King's College Hospital, London.

WILLIAMS, W. COLLINGWOOD, B.Sc., has been appointed Public Analyst by the Blackburn Town Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD GENERAL INFIRMARY.—Honorary Surgeon.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board, washing, lodging, &c.

BOROUGH HOSPITAL, Birkenhead.—Junior House Surgeon. Salary £60 per annum.

CITY HOSPITAL FOR INFECTIOUS DISEASES, Newcastle-upon-Tyne.—Resident Medical Assistant for one year, subject to re-election for a second year. Terms, £50 for the first year and £70 for the second year, with board, lodging, and washing.

COUNTY ASYLUM, Whittingham, Lancashire.—Pathologist. Salary £200 per annum, with apartments, board, washing, and attendance.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Pathologist and Registrar. Salary £40 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Surgeon to Out-patients (non-resident), for six months. Salary 25 guineas.

HOSPITAL FOR WOMEN, Soho-square, London, W.—House Physician for six months. Salary £30.

LINNÆAN SOCIETY OF NEW SOUTH WALES, Sydney.—Macleay Bacteriologist.—Bacteriologist. Salary £350 per annum. Applications to Messrs. Dulau and Co., Soho-square, London, W.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70 per annum, with board, apartments, and washing in the hospital.

LONDON COUNTY ASYLUM, Hanwell, W.—Fifth Assistant Medical Officer. Salary £120 per annum, rising by £5 a year to £150, with board, furnished apartments, and washing. Applications to the Clerk of the Asylums Committee, 21, Whitehall-place, S.W.

LONDON HOSPITAL, Whitechapel-road, E.—Assistant Instructor in Anæsthetics.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrarship. Salary £100 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 for the first year, with board and residence.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART AND PARALYSIS, Soho-square, London, W.—Resident Medical Officer. Board, residence, laundry, and an honorarium of 10 guineas, for six months.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch, E.C.—Dentist. Applications to the Secretary, Office, 27, Clement's-lane, E.C.

QUEEN'S COLLEGES, Ireland.—Professorship of Natural Philosophy in the Queen's College, Belfast. Applications to the Under Secretary, Dublin Castle.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. Gratuity of £10 given conditionally.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £80 per annum, with board.

SUNDERLAND AND NORTH DURHAM EYE INFIRMARY.—House Surgeon, out-door. Salary at the rate of £100 per annum.

VICTORIA UNIVERSITY, Manchester.—External Examinerships.

WESTERN GENERAL DISPENSARY, Marylebone-road, London, N.W.—House Surgeon, unmarried. Salary £60 a year, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

HENRY.—On Oct. 30th, at Blair, Minehead, Somerset, the wife of Gordon Henry, M.R.C.S., L.R.C.P., of a daughter.

PHILLIPS.—On Oct. 25th, at Carlisle-street, Cardiff, the wife of J. A. Phillips, L.R.C.P., &c., of a daughter.

ROGERS.—On Nov. 2nd, at Thornton-hill, Wimbledon, the residence of her father, the wife of Surgeon-Captain F. A. Rogers, D.S.O., I.M.S. (Bengal), of a son.

SCOTT.—On Oct. 30th, at Hebert House, Denmark-hill, the wife of T. Graham Scott, M.R.C.S., L.R.C.P. Eng., of a son.

STEEDMAN.—On Oct. 28th, at Streatham, the wife of J. F. Steedman, F.R.C.S., of a daughter.

WILSON.—On Nov. 1st, at The Moorings, Kew-gardens, Surrey, the wife of Ralph W. Wilson, M.D., of a daughter.

MARRIAGES.

BARNES—CATTELL.—On Oct. 29th, at the Dominican Priory, Hampstead, Staff-Surgeon W. G. K. Barnes, second son of F. K. Barnes, late Surveyor of Dockyards, Admiralty, to Frances Helen Agnes (Nellie), second daughter of Deputy-Surgeon-General Cattell, F.L.S.

BIDWELL—PARKINGTON.—On Oct. 28th, at St. James's Church, Spanish-place, Leonard Arthur Bidwell, F.R.C.S., of Wimpole-street, W., to Dorothea Marie Louise, eldest daughter of Major Roper Parkington, J.P., of Devonshire-place, W.

FIELDER—BASS.—On Oct. 29th, at St. Michael's, East Teignmouth, Frederick John Fielder, M.B., B.S. Lond., &c., to Lily, third daughter of Mr. Thomas Bass, of Greenroyd, Teignmouth, and late of Christchurch-road, Streatham-hill.

JOHNSTON—OWEN.—On Oct. 28th, at St. Alkmund's, Derby, Richard Arnold Johnston, L.R.C.P., L.R.C.S. Edin., of Belper, to Mary Louisa Owen, of St. Alkmund's Vicarage, Derby.

JONES—MOORE.—On Oct. 29th, at St. Stephen's Church, Westbourne-park, Lewis Jones, M.A., M.D. T.C. Dubl., of Oakmead, Balham, Surrey, to Constance Emma, fourth daughter of the late William Withers Moore, M.D., F.R.C.P., of Brunswick-square, Brighton, and The Oaks, Burgess-hill, Sussex.

MILNER—CHANDLEY.—On Nov. 5th, at the Parish Church, Grappenhall, Cheshire, by the Rev. John Milner, Rector of Dunganston, Wicklow, brother of the bridegroom, assisted by the Rev. Richard Greenall, Rector of the Parish, Edmund Taylor Milner, M.A., M.B. Oxon., of Manchester, third son of the late Ralph Milner, M.R.C.S., to Emma, eldest daughter of Silvanus Chandley, Latchford.

QUARTEY-PAPAFIO—MEYER.—On Oct. 8th, at the Church of St. Bartholomew-the-Less, St. Bartholomew's Hospital, London, by the Rev. W. Ostle, Vicar, Benjamin William Quartey-Papafio, M.D. Edin., M.R.C.S. Eng., son of the late Chief Papafio, of Accra, Gold Coast, to Eliza Sabina, daughter of the late Richard S. Meyer, of Accra.

SENIOR—REDFORD.—On Oct. 29th, at Union Church, Putney, Ernest Westall Senior, M.R.C.S., L.R.C.P., Hamilton-villa, Herne Bay, to Mary, daughter of the Rev. R. A. Redford, M.A., LL.B., Crost House, Putney.

TRAHERNE—HARVEY.—On Nov. 4th, at St. Paul's, Knightsbridge, by the Rev. Montagu Villiers, Onslow Powell, only son of Major Anthony Traherne, of Halterworth, Romsey, Hants, to Muriel, eldest daughter of John Selwyn Harvey, M.D., M.R.C.P., 1, Artwood-road, S.W.

DEATHS.

FAVELL.—On Oct. 31st, at Brunswick House, Glossop-road, Sheffield, William Fisher Favell, M.R.C.S., J.P., aged 64.

MARTIN.—On Oct. 27th, at Burley-in-Wharfedale, H. Newell Martin, M.D., D.Sc., F.R.S., formerly Fellow of Christ's College, Cambridge, late Professor of Biology at the Johns Hopkins University, Baltimore, U.S.A.

MUNRO.—On Oct. 30th, Surgeon-General William Munro, M.D., C.B., LL.D., of West Cromwell-road, Kensington, late 93rd Gordon Highlanders, in his 73rd year.

PAGE.—On Nov. 3rd, at 1, Saville-place, Newcastle-upon-Tyne, Mrs. Frederick Page.

WARING.—On Oct. 31st, at his hotel, in London, suddenly, Francis Robert Waring, Deputy-Inspector-General of Hospitals (retired), aged 87.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

TUESDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (2 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (11th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.).

THURSDAY (12th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.)

FRIDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2 30 P.M.).

SATURDAY (14th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (9th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Mr. C. B. Lockwood: Case of Gastroenterostomy.—Dr. de Havilland Hall: Case of Enlarged Glands.—Mr. Clinton Dent: Case of Fragilitas Ossium.—Dr. Walter Carr: Two Cases of Pseudo-hypertrophic Paralysis.—Mr. D. H. Goodsall: Case of Removal of Pelvic Tumour.—Mr. W. H. Battle: (1) Case of Deformity after Injury to the Hip in a Boy; (2) The Result after Operation for excessive Genu Valgum and Genu Varum.—Mr. G. R. Turner: (1) Case of old Dislocation into the Obturator Foramen in which the Head of the Femur has been Excised; (2) Case of Congenital Deformity of Lower Jaw.

TUESDAY (10th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Dr. T. Wilson (communicated by Dr. Gowers): A Case of Locomotor Ataxy occurring in a Young Woman; Tabetic Arthropathy with Dislocation of Both Hips; Six Pregnancies occurring in the Course of the Disease.—Dr. F. Still (communicated by Dr. Garrod): On a Form of Chronic Joint Disease in Children.

WEDNESDAY (11th).—LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens:—Dr. F. Semon: Specimens of the Larynx of the Cormorant and of the Solan-goose.—Dr. W. Williams: Man with Congenital Occlusion of the Right Naris.—Dr. Bond: (1) Arrested Development in a Child; (2) Angeioma of the Nasal Septum in a Man, case and microscopical specimen; (3) Sarcoma of the Nose after Operation, male aged sixty-two years (*vide* Proceedings, May, 1896).—Dr. St. C. Thomson: Constant, Clear, Watery Discharge from one side of the Nose in a Female aged twenty-three years.—Mr. C. Baber: Mucocele in the Frontal Sinus treated by Radical Operation.—Dr. E. Law: Hæmatoma of the Palate (?).—Dr. H. Tilley: (1) Large Pharangeal Tumour (? hæmatoma); (2) Tubercular Laryngitis.—Dr. F. Wilcox: Multiple Papillomata of Larynx in a Boy.—Mr. W. G. Spencer: (1) Spheroidal-celled Carcinoma of Vocal Cord; (2) Perichondral Sarcoma of Cricoid.—Mr. E. C. Stabb: Laryngeal Growth.

HUNTERIAN SOCIETY (London Institution).—8 P.M. Dr. McClymont: The Etiology of Acute Rheumatism.

THURSDAY (12th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-st., Cavendish-sq., W.).—8 P.M. Card Specimens:—Mr. Critchett, Mr. Juler, Mr. J. Griffith, and others. 8.30 P.M. Papers:—Dr. H. Griffith: Cases of Intraocular Cysticercus, with preparations.—Mr. H. Spicer: Electrolysis in the Treatment of Corneal Opacities. Dr. L. Ferguson: Note on a Stitch for advancement or Adjustment of the Ocular Muscles.

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Specimens: Mr. C. Martin and others. Note by Dr. Meek (London, Canada). Paper by Dr. Armstrong (Buxton): The Latent Gout of the Menopause.

FRIDAY (13th).—CLINICAL SOCIETY OF LONDON.—8.30 P.M. Papers:—Mr. H. B. Robinson: Suppurative Pericarditis, Resection of the Sixth Rib, Drainage through Left Pleura, Recovery.—Mr. R. H. Mills-Roberts: A Case of Extensive Fracture of the Ribs.—Mr. W. G. Spencer: A "Ventral" Form of Inguinal Hernia.—Dr. S. West: Two Cases of Clubbing of the Fingers Developing within a Fortnight and Four Weeks respectively.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (9th).—LONDON POST-GRADUATE COURSE.—Roy. Lond. Ophthalmic Hospital, Moorfields, 1 P.M., Mr. A. S. Morton: Affections of Eyelids.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G. Stoker: Impaired Movements of the Vocal Cords.

TUESDAY (10th).—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Craig: General Paralysis.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: Sclerodermia and Morphœa.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-st., W.C.).—2.30 P.M. Dr. Lees: Rheumatism and Heart Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Buzzard: Disseminated Sclerosis and Hysteria.

THE BROWN ANIMAL SANATORY INSTITUTION (University of London, Burlington-gardens, W.).—5 P.M. Dr. J. R. Bradford: The Work of the Brown Institution, with Special Reference to Rabies.

WEDNESDAY (11th).—LONDON POST-GRADUATE COURSE.—Roy. Lond. Ophthalmic Hospital, Moorfields, 3 P.M., Mr. E. T. Collins: Glaucoma.

HOSPITAL FOR CONSUMPTION, &c. (Brompton).—4 P.M. Dr. Green: The Early Diagnosis of Pulmonary Tuberculosis.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. H. P. Dunn: Eye Cases.

THURSDAY (12th).—LONDON POST-GRADUATE COURSE.—Brit. Inst. of Preventive Medicine, Gt. Russell-st., W.C., 3.30 P.M., Dr. Allan Macfadyen and Mr. A. G. Foulerton: Detection of Pus, Mucus, Blood, and Bile in Urine.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Dr. G. Oliver: The Blood.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-st., W.C.).—4 P.M. Dr. Barlow: Clinical Lecture.

FRIDAY (13th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Typhoid Fever and Diphtheria.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-st., W.C.).—11.15 A.M. Dr. Penrose: Diseases of the Digestive Tract.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Mr. M. Gunn: Investigation of Ocular Paralysis.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

"THE TREATMENT OF ALCOHOLIC NEURITIS."

To the Editors of THE LANCET.

SIRS,—"Junior Practitioner" will find full information on the subject in the recent work by Ross and Judson Bury (published by C. Griffin) on "Peripheral Neuritis"; in Buzzard's "Lectures on Peripheral Neuritis" (J. and A. Churchill); or in Gowers' "Manual of Diseases of the Nervous System," second edition (J. and A. Churchill).

I am, Sirs, yours faithfully,

Wimpole-street, Nov. 1st, 1896. M.D.

Verax.—We do not consider that under ordinary circumstances the clergyman has more claim upon the medical man than, say, the butcher. A kindly medical man may treat the curate for nothing if he likes, and we hope that the invitation to improvidence thus implied will be counted to him as righteousness; but we have never heard of, again say, a butcher offering similar advantages to his medical clients. Yet it is in our eyes as virtuous to be generous to a poor medical man as a poor priest.

"PEPTONISED COCOA."

MR. W. P. VAN WYK, referring to our analytical notice of his peptonised cocoa last week, says that "the alkali present in the cocoa has not been added *solely* with a view to rendering the cocoa soluble." We never said it had. On the contrary, we said that the statement that the cocoa had been treated or partially digested with pancreatin after the addition of bicarbonate of soda was "so far confirmed by the fact of the cocoa being dark in colour, by its high degree of solubility, by its yielding a strong rich decoction," &c. We are quite aware that pancreatin is only active in an alkaline medium.

N. Y. Z.—Zinc has been credited at different times and by different people with a powerful tonic action on the nervous system. If used for this purpose for any length of time small doses should be given, and even then it is apt to excite nausea. The oxide of zinc has been the preparation most frequently given for its tonic action, but a drawback to it is its insolubility. The sulphate is, however, more soluble and so need not necessarily be given with sulphuric acid which would not in any way increase the tonic action. The salts of zinc have been used in whooping-cough, epilepsy, and nervous headache, &c., and the valerianate of zinc has been specially useful in some cases of hysteria. Whether given dissolved in acid or otherwise the dose should carefully be kept within the usual limits.

Mr. R. Williams.—Our correspondent's information does not agree with ours, nor do we think that a poll will be a bad thing at all.

"LOCAL HOT-AIR TREATMENT."

To the Editors of THE LANCET.

SIRS,—I have not wished, nor do I now, to depreciate the merits of the Tallerman-Sheffield bath; on the contrary, judging from the reports I have read of its success it seems an advance on all previous methods of hot-air application. The intention of my letter of Oct. 17th was to endorse the statement of "Medicus" on the 10th—viz., that the principle of the employment of hot air is not new. I fail to see, as Mr. Tallerman charges, where "my statements respecting the lease are in essentials the reverse of facts," and as he calls on me to publish the terms and conditions referred to I give them as stated in the prospectus of the company itself:—

> "The Company will let their apparatus on a term of five years at the rate of ten guineas per annum, the total rental, fifty guineas, to be paid in advance—i.e., fifteen guineas on application and the balance on delivery, on the conditions endorsed on the letter of application." It is added—"The Company will be agreeable to arrange for the payment of the balance of thirty-five pounds by instalments over an extended period."

And the following are the fees charged by the company "exclusive of medical attendance at their institution in Welbeck-street":—

"Non-resident patients, treatment, single operation	2 guineas.
" " " a course of ten operations	10 guineas.
Resident patients, inclusive of treatment, per week	7 to 12 guineas.
Treatment of patients at their own home in London, requiring an apparatus to be left and the attendance of a nurse, course of ten operations	25 guineas.
Hire of apparatus to country patients, per month	10 guineas and cost of carriage."

It will be observed that the fifty guineas is for hire not purchase. The "conditions" to be agreed to at time of hiring—too long to be quoted here—seem to me most exacting, and one (No. 5) probably productive of dispute at the end of the period of hire, as to the interpretation of the phrase "reasonable wear and tear only excepted." The initial cost of the apparatus, I am led to believe, is not great, probably, say, for an arm or a leg less than five pounds (though on this point I am not certain), and if I am correct the sum of forty-five guineas does seem to me, for hire only, an excessive one and to preclude the use of the bath to any but the wealthy. For this reason I hope a less expensive and equally efficient apparatus will be devised, either by the Tallerman-Sheffield Company or others without infringement of the patent, so as to be generally available. I am, Sirs, yours truly,

Nov. 2nd, 1896. M.D.

Anti-Humbug will find in the small book published by us entitled "The Battle of the Clubs" accounts of developments under the medical aid associations which have nothing in common with the routine of the old-fashioned club. There is a point where the dealings of the two kinds of institutions have faults in common. For this there is but one remedy—the formation by the medical men of the district of a medical club managed by themselves on fair lines.

E. E. J.—A very complete article on the relative value of most antiseptic substances will be found in "A Dictionary of Applied Chemistry," by T. E. Thorpe, F.R.S., vol. i., second edition, page 671.

York.—We believe that many have very fair practices, and that the future of practitioners depends almost entirely upon their personalities.

"A SURGEON-CHIROPODIST."

A CORRESPONDENT points out to us that the *Newcastle Journal* dated Oct. 28th, 1896, contains the following:—

NOTICE.

SIXTH RETURN VISIT TO NEWCASTLE.

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NEWCASTLE ON-TYNE.

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Numerous testimonials from leading medical and other influential gentlemen of Newcastle-on-Tyne vouching as to Mr. Siemms' skilful and painless mode of treatment may be seen at his rooms. Among many others are the following, and to whom he can refer:—

W. D. Stephens, Esq., J.P., Dr. Wm. Murray, Dr. Spence Watson, Dr. John Macaulay, J. H. Richardson, Esq., Dr. P. Phillips Bedson, F.I.C., Councillor McBryde, Dr. R. C. Nesham.

Fee from 2s. 6d. each Corn. Bunions, Callosities, Diseased Nails charged accordingly. Fee specified in all cases previous to operation. Patients attended at own residence without extra charge.

An early visit politely requested.

It is imperative that Dr. Wm. Murray, Dr. John Macaulay, and Dr. T. C. Nesham, who are all on the Medical Register, should insist that their names are withdrawn from this testimonial to the merits of an advertising corn-cutter. The matter may seem a small one to them, but many would not so regard it.

A. B.—Our correspondent will find several references on the bacteriology of tobacco smoke in Neale's Medical Digest, 1840-90. Articles have also appeared from time to time on this subject in THE LANCET. THE LANCET of Oct. 13th, 1888, contains, perhaps, the information he desires in an annotation entitled "Tobacco and Bacteria."

S. M. A.—It is necessary to be on the Medical Register to practise legally in Great Britain, and the diploma mentioned would not entitle its holder to have his name placed thereon. He must obtain a recognised qualification.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 5th, 1896.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Oct. 30	29·74	N.E.	39	38	65	50	36	...	Hazy
,, 31	29·64	N.E.	39	38	76	49	38	...	Fine
Nov. 1	29·72	N.E.	44	44	56	49	39	0·15	Foggy
,, 2	29·81	N.E.	46	45	54	49	43	0·02	Overcast
,, 3	29·92	N.E.	42	41	70	48	41	...	Cloudy
,, 4	30·29	N.E.	38	37	66	49	36	...	Hazy
,, 5	30·48	N.E.	40	39	66	48	38	...	Foggy

During the week marked copies of the following newspapers have been received:—*Aberdeen Evening Express, Brighton Gazette, Southampton Times, Bury Guardian, Grocer, Manchester Guardian, Cambrian, Somerset City Herald, Worcester Journal, Portsmouth Times, Hampshire Independent, Newcastle Chronicle, Yorkshire Post, Sheffield Independent, Times of India, Express and Star, Pioneer Mail, Bradford Observer, Dundee Courier, Hull News, Liverpool Daily Post, South Wales Daily News, Birmingham Post, Western Morning News, Brighton Argus, Leeds Mercury, Scotsman, Builder, Forfar Herald, Woburn Reporter, Architect, Bristol Mercury, Westminster Gazette, Manchester Courier, Wolverhampton Chronicle, Sussex Daily News, Halifax Guardian, Dunstable Advertiser, Glasgow Herald, Huddersfield Examiner, Leicester Post, Oldbury Weekly News, Sanitary Record, Hertfordshire Mercury, Local Government Chronicle, Weekly Free Press and Aberdeen Herald, Newbury Weekly News, Reading Mercury, City Press, Surrey Advertiser, Local Government Journal, Mining Journal, Dorset County Chronicle, Perth Constitutional, Guernsey Star, Scarborough Evening News, Kidderminster Times, Kent Herald, East London Observer, Midland Evening News, Public Health, National Observer, Reading Observer, South Australian Register, Liverpool Courier, Walsall Advertiser, Daily Mail, West Middlesex Herald, Western Mail, Herts Guardian, Musical News, Sunday Times, &c., &c.*

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